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Linking smallholder farmers to horticultural markets a review of the effectiveness of produce marketing organisations and trust in promoting inclusive value chains

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Linking Smallholder Farmers to Horticultural Markets:

A review of the effectiveness of Produce
Marketing Organisations and Trust in
promoting inclusive value chains

Nephas Munyeche

2017

**A thesis submitted to the University of Coventry in partial
fulfilment of the requirements for the degree of Doctor of
Philosophy**

Declaration

I do hereby declare that this thesis is my own work and effort and it has not been submitted anywhere for any other award.

Due acknowledgements have been done where other sources of information have been used

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Abstract

This study examined the effectiveness of a cooperative managed Produce Marketing Organisation (PMO) and the function of trust in linking smallholder farmers to contemporary horticultural markets. The study is based on field work conducted in Livingstone, Zambia during the period 2009 – 2013 that set out to review the capacity of a cooperative managed Produce Marketing Organisation to provide business development services (market information) to smallholder farmers engaged in horticultural production and marketing. The study also investigated the relationship between mutual hostage investments and trust in transactional exchange and investigated if smallholder farmer's motivation to participate in certification programs is linked to their level of trust in the market integrator.

The study employed a mixed research methods approach through qualitative and quantitative data collection methods to test the study hypotheses. Data analysis was mainly conducted using the Statistical Package for Social Sciences (SPSS) involving calculation of frequency tabulations, chi square tests; Wilcoxon signed rank tests as well as the Spearman's rank correlation coefficient test.

The results from this study indicate that Produce Marketing Organisations should not be viewed as the magic bullet that will solve all the market information requirements of smallholder farmers. As confirmed by the study results, the Farmers Green Market (the PMO used as a case study for this research) was capable of providing smallholder farmers with market information on food safety and quality standards required by contemporary horticulture markets as well as produce prices but was not equally successful in transmitting to the smallholder farmers information on produce volumes that were required by target markets. This in turn limited the ability of the Produce Marketing Organisation to influence the production strategies that were employed by the small scale farmers who supplied it with produce, not least because it was unable to secure contracts further along the supply chain.

The study points to the need to promote the rebranding of the market image and perception of farmers' cooperatives by other value chain actors which has been tarnished by previous history of failure to fulfil market contracts and thus failing to promote smallholder farmers' inclusion in agribusiness value chains. This reputational history continues to limit this cooperative managed Produce Marketing Organisation to engage with other actors and to create networks that could be beneficial for the inclusion of smallholder farmers in contemporary value markets.

This study also highlights that small scale farmers who trust their market integrators are committed to participate in certification programmes which entrench compliance to food safety and quality standards and general Good Agricultural Practices (GAPs) that are demanded by contemporary horticultural value chains, especially those linked to export. The study argues that the previously held assumption that price premiums are the main motivation for smallholder farmers to participate in certification programmes should be revisited as premiums paid for the increasing market demands on GAPs and food safety and quality are diminishing. The study results demonstrate that the smallholder farmer's participation in certification programmes was initially a condition of external funding to set up the Farmers Green Market but is not a condition of supply. Continued supply to the Farmers Green Market will be increasingly linked to other variables such as trust and the quality of the working relationship with their exchange partners (in this case the Produce Marketing Organisation).

While previous literature has shown a relationship between hostage mutual investments and trust building between exchange partners, the study results indicate the contrary rather emphasising that while transaction specific investments are important, the partner's ability to competently manage the resources for the mutual benefit of the exchange partners and the source of the funds used to acquire the assets are important considerations exchange partners consider in the trust building process.

The study recommends the need to strengthen the management of the Produce Marketing Organisation to become an effective link between smallholder farmers and the rest of the value chain. This needs to include investments to improve ineffective cooperative business management, improvements in marketing infrastructure that links

market requirements to smallholder production and improved communications and logistics. This could be realised through the development of Public Private Partnerships to address market failures currently limiting smallholder farmer's participation in value markets. Given an improved PMO, then investments in smallholder farmers training in farming as a business would be the next logical step; however, it is not necessary for this to include formal training in private standards unless the supply chain is export orientated.

Dedication

I dedicate this work to my wife Idzai Murimba, for the endless nagging and encouragement to finish the research study and to my three children who have been patient with me and encouraged me in their own ways to be brave and to not lose sight of the big dreams.

Also to all the good men and women of this world, who do good to others, particularly Dr. Richard Baines whose support on this study has been amazing!

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Chapter 1 – Introduction

1.1 Background to the study

The importance of small holder agriculture in sub-Saharan Africa's development has been greatly recognised in recent years (see for example Sartorius and Kirsten, 2002; Barham, 2007; Barham and Chitemi, 2009; Getnet and Annullo, 2012; Nannyonjo, 2013). This growing recognition of the socio-economic contribution made by small scale farmers in developing countries is linked to two major cross-currents of theory and practice. First, there is increasing acceptance that agricultural development, particularly in sub Saharan Africa, will not occur without engaging smallholder farmers who account for the overwhelming majority of actors in this sector (Barham and Chitemi, 2009; Vermeulen and Cortula, 2010). The second current is the increasing acceptance that one of the major obstacles facing smallholder led agricultural growth is lack of market access, which proponents for access contend, will lead to increased incomes, food security, more rural employment, and sustained agricultural growth (Poulton et al., 1998; Stiglitz, 2002; Dorward et al., 2003; Barham and Chitemi, 2009; Ferris et al, 2014). Market access proponents strongly argue that for small scale farmers to participate competitively on markets, it is necessary to create an entrepreneurial culture in rural communities (see for example Lundy et al., 2002; Develtere et al, 2008 and World Bank, 2008; Chapoto et al, 2012; Ruete, 2014;) which will involve shifting the focus from the current production-related programmes to more market-oriented interventions(Barham and Chitemi, 2009;

Ruete, 2014; Mumba et al, 2015). This emphasis on farming as a business (FAAB) (see for example Musitini, 2012) and the need to better connect small scale farmers to agricultural markets has entrenched renewed attention and interest by Governments and other development organisations to promote conditions that facilitate the entrenchment of viable commercial relationships between small scale farmers and markets as a strategy for enhancing rural household livelihoods in developing countries (Barham, 2007, Ruete, 2014).

Smallholder farmer's participation in agribusiness value chains however needs to be carefully considered as different enterprises provide different levels of economic benefit to participating growers. It is in this respect that the horticulture industry is increasingly becoming an important sector in sub Saharan African economies due to the higher levels of economic opportunities that it provides to participating growers (Barham and Chitemi, 2009; Hichaambwa, 2010, Barrientos and Visser, 2012). As an example, Tschirley *et al.* (2012), explains that an average market oriented smallholder farmer in Zambia often sells one to two metric tons of maize at a price ranging from US\$0.12 to US\$0.25 per kg, depending on the year and sales channel. Total gross revenue thus ranges from US\$120 to US\$500, which the farmer secures as a one off payment after maize harvest. On the contrary, an average smallholder farmer can produce between 10 to 15 metric tons of tomatoes over several months and sell at an average price of US\$0.30 to 0.35/kg, for a total gross value of US\$3 000 to US\$5 250 a value 10 to 30 times higher than the maize crop. It is for this reason that Hichaambwa et al (2015) has posed the question whether smallholder horticulture is the unfunded poverty reduction option in Zambia? In this study, Hichaambwa et al (2015) present a convincing argument that strengthening smallholder farmer's participation in horticultural supply chains increases their chances of moving out of poverty. These conclusions are in sync with the findings from other similar studies which also confirm the fact that small scale farmers who grow and sell horticultural produce are more likely to get out of poverty than cereal growers (Munyeche et al; 2011). Agwater Solutions (2011) note that smallholder farmers across the world currently derive 40% of their cash income from the sale of fresh produce and the income of fresh produce selling farmers is 35% higher than that of non-sellers. In the same vein, Hichaambwa (2006) reported that fresh produce accounts for 18% of Zambian rural household's total income and 39% of the rural household's cash income.

The mean household per capita income among small scale farmers who sell fresh produce was estimated to be US\$183 compared to US\$103 among non-sellers (Hichaambwa, 2006).

It is in this regard that efforts to encourage the production and marketing of high value fresh fruit and vegetable food products is considered by international development practitioners as a vital strategic move that could contribute towards alleviating poverty particularly in sub Saharan Africa (Barham and Chitemi, 2009; Hichaambwa et al, 2015). The dilemma facing small scale farmers in many developing countries however is the uncertainty whether these small scale, low resource endowed farmers are in a position to adjust their production and marketing strategies to meet the demands of modern horticultural markets (Kirsten and Sartorius, 2002). In most cases, smallholder farmers are confronted with challenges to ensure produce traceability, compliance to food safety and quality standards of target markets and failing to organise themselves in a manner that allows them to achieve required economies of scale to strengthen their negotiation voice in commercial relationships with other stakeholders (Markelova et al 2009; Munyeche et al, 2011). It is in this respect that Sartorius and Kirsten (2002) concluded that smallholder growers are confronted by the unfortunate possibility of being marginalised as a result of the changing structure and requirements of the modern agricultural sector unless if they can adjust their production and marketing strategies to be more competitive in contemporary horticultural value chains. It is in this respect that over the last decade development funding for agribusiness development initiatives in developing countries has largely been focused on strategies aimed at 'linking smallholders to value markets' to foster local economic development. Several international donor agencies have been particularly interested in such approaches for instance, the German Agency for International Development (GIZ) and United States Agency for International Development (USAID) have both been promoting the development of inclusive value chains (USAID, 2014). The United Kingdom Agency for International Development (DfID) and the Swiss Agency for International Development and Cooperation have also been promoting inclusive market systems development approaches as a strategy to improve smallholder farmer's participation in agribusiness value chains (Springfield Centre, 2015). It is interesting to reflect at this stage that these donor supported projects have often included farmer awareness and training in

international private standards despite the fact that the majority of smallholders will likely never become part of such formal arrangements (Kirsten and Sartorius, 2002). While modern fresh produce markets present opportunities that can benefit smallholder farmers, this can only be achieved when production and marketing barriers are tackled. From an international perspective this is likely to be articulated in private standards such as GlobalGAP produce standards (GlobalGAP, no date) including 3rd party (certification) audits of individual or groups of farmers. For most smallholder farmers, however, local horticultural markets continue to provide more opportunities for their inclusion and participation. This means targeting markets such as wholesale markets, local supermarkets, the tourism industry and food service; all of which do not necessarily require formal adherence to audited standards but rely on 2nd party (buyer) assessments of some kind. Even at this local value chain level however, smallholders face the challenges of: scheduling sufficient produce of an acceptable quality; meeting safety and quality requirements of the market; and, the costs of transporting to consumers or integrator hubs.

In order to address some of the market imperfections outlined above that limit smallholder farmer's competitiveness in horticultural value chains, several scholars (e.g. Markelova et al, 2009; Hichaambwa et al, 2015; Chapoto et al, 2012) have emphasised the importance of strengthening smallholder farmers organisations to become vehicles through which they can have improved access to: (a) market information, (b) production and marketing technologies, (c) extension, (d) aggregation facilities to facilitate bulking of produce for target markets and (e) stronger voice to negotiate favourable partnership deals with other value chain actors. Ruete (2014) for example concludes that smallholder farmer's agricultural cooperatives greatly contribute towards poverty reduction by offering an inclusive and democratic avenue for economic growth but appropriate models (including policy and legal frameworks) are required to ensure success. In addition, smallholder farmer's organisations also provide a framework for group certification for international value markets if farmer members are under a common supervisory framework for field operations, e.g. GlobalGAP option 2 certification (GlobalGAP, no date).

This study is based on field work that was conducted in Zambia during the period 2009 – 2013. The main case study for this research was identified in the southern province, in Livingstone town where a European Union funded project had set up a local cool chain hub and had funded training in private standards targeting smallholder farmers as a strategy to increase their opportunities for competitive participation in horticultural value markets. As part of the context analysis, a comparative review of smallholder livelihoods and participation in horticultural markets was also conducted in Lusaka, Zambia’s capital city. This area was chosen because of the close proximity of smallholders to the international airport and a past history of export of high value produce to international markets where private standards were a condition of supply.



Figure 1: Geographical location of Zambia

Location of the main case study area circled red and a comparative study location circled green

(Adapted from: Mwiinga, 2009)

1.2 Overview of the Research Location

Zambia is a landlocked country located in southern Africa which has a total land area of 752 618 square kilometres of which 9 220 square kilometres are water¹. The country shares borders with a total of seven other countries namely – Mozambique, Namibia,

¹ See https://en.wikipedia.org/wiki/Geography_of_Zambia

Angola, Democratic Republic of the Congo (DRC), Zimbabwe, Malawi and Tanzania. The Zambian Government in its National Agricultural Policy (2012 – 2030) confirms its commitment to promote the strengthening of smallholder farmer’s agricultural production and marketing activities with a view to promote their graduation from subsistence agriculture to market oriented farming activities (Government of the Republic of Zambia, 2011). Small scale farmers in the rural areas dominate agricultural production in the country despite their limited production land and dependence on own labour with little access to farm mechanisation (Table 1).

Table 1: Types of Farmers in Zambia

Characteristics	Small scale farmers	Medium scale farmers	Large Scale
Farm Size (Hectares)	Less than 5 Ha	5 – 20 Ha	More than 20 Ha
Crops Grown	Food Crops	Food / Cash Crops	Food / Cash
Type of Production	Subsistence	Commercial	Commercial

Source: Government of the Republic of Zambia, 2011.

The Zambian government acknowledges that there has been a strong bias towards maize and neglect of other crops like fruits and vegetables as well as legumes that are required to enrich the national diet as well as farm incomes (Government of the Republic of Zambia, 2011). Indeed, while many stakeholders acknowledge that agricultural growth is the most powerful tool out of poverty for Zambia’s rural population, there is general consensus that the country should diversify its primary focus from a single crop (maize) to other value chains that can offer the rural poor better opportunities to improve their economic position. For instance, Hichaambwa et al (2015) indicate that despite the fact that the Zambian government has spent more than 60% of the annual public expenditure in the past decade to finance maize input and output subsidies this has not necessarily translated into increased farm profitability or incomes for the majority of smallholder farmers in the country. It is from this basis that there are increasing calls that smallholder farmer’s participation in other agricultural value chains should be considered as a priority (particularly in the horticulture sector).

The demand for horticultural produce in Zambia has increased drastically partly due to population increases in the country's main urban centres such as Lusaka, Ndola, Kitwe and Chingola but also due to the increasing affluence of these (urban) middle classes (Mumba et al, 2015). As an example, fresh produce accounts for 14% of the food budget of urban households in Lusaka (Hichaambwa, 2010; Tschirley and Hichaambwa, 2010). Putting this in the wider Zambian context, rural households mostly produce their own vegetables, while urban households generally rely on purchases; this is reflected in the fact that the share from own production in total household consumption of vegetables in Lusaka for example is only 7% (Tschirley and Hichaambwa, 2010). This therefore indicates that over 90% of the value of vegetables consumed in Lusaka passes through marketing channels involving wholesale as well as retail markets as purchases (Tschirley and Hichaambwa, 2010).

Zambia's Gross Domestic Product (GDP) has also been growing with the highest being 26.97 billion United States dollars recorded in 2014 (Figure 2).



Figure 2: Zambia's Gross Domestic Product 2008 – 2015

Source: Trading Economics

The growth in Zambia's GDP resulted in the reclassification of the country by the World Bank in 2010 as a low middle income country together with Ghana (World Bank, 2011). This economic growth, arguably attributed to foreign aid driven interventions and

surging copper prices, has translated into increased incomes among Zambia's middle classes thus further increasing the demand for fresh fruit and vegetables (Mumba et al, 2015).

The vegetables for the domestic market are grown by both commercial and smallholder farmers. Common vegetables grown for domestic markets are tomatoes, cabbages, rape, pumpkins, green beans, potatoes, onions, garlic, okra, eggplant, green maize, carrots, chillies and spinach. Tomatoes, cabbage, rape, and onions enjoy good demand in both rural and urban markets and are an important part of most Zambian diets. Rape has the highest consumption share at 4% followed by tomatoes (3.5%), onions (1.6%) and cabbage (0.7%)(Tschirley and Hichaambwa,2010). Although Zambia's altitude ranging from 1,200 to 1,800 metres provides the conditions that the country requires to grow quality vegetables including temperate crops for both domestic and export markets, the country continues to import significant quantities of vegetables and fruits despite boasting favourable climatic conditions, good soils and plenty of arable land. The value of imported assorted edible vegetables products (including some roots and tubers) increased from US\$ 7,239 million in 2011 to US\$ 12,515 million in 2015 (International Trade Centre, 2015; Table 2). Putting aside the imports, Mumba et al (2015) indicate that Zambia exported vegetables worth US\$ 11.5 million to the neighbouring Democratic Republic of Congo (DRC) and other COMESA² countries in 2014. These statistics show that the horticulture sector in Zambia can create wealth and income for smallholder farmers if the imports were substituted by local production and exports increased.

² The Common Market for Eastern and Southern Africa (COMESA) was formed in December 1994 to replace the former Preferential Trade Area from the early 1980s in Eastern and Southern Africa. The main focus of COMESA has been on the formation of a large economic and trading unit to overcome trade barriers that are faced by individual member states.

Table 2: Zambia Imports: Edible vegetables and certain roots and tubers (2011 – 2015)

Product label	Imported value in 2011	Imported value in 2012	Imported value in 2013	Imported value in 2014	Imported value in 2015
Onions, shallots, garlic, leeks and other alliaceous vegetables, fresh or chilled	1,787	3,330	2,564	3,097	4,281
Potatoes, fresh or chilled	2,095	2,774	3,022	4,148	4,230
Vegetables, uncooked or cooked by steaming or boiling in water, frozen	932	1,515	2,306	3,043	1,759
Dried leguminous vegetables, shelled, whether or not skinned or split	877	459	449	1,044	856
Other vegetables, fresh or chilled (excluding potatoes, tomatoes, alliaceous vegetables, edible ...	370	912	723	739	756
Carrots, turnips, salad beetroot, salsify, celeriac, radishes and similar edible roots, fresh ...	125	154	273	168	349
Dried vegetables, whole, cut, sliced, broken or in powder, but not further prepared	89	78	122	81	81
Vegetables provisionally preserved, e.g. by sulphur dioxide gas, in brine, in sulphur water ...	99	107	67	46	74
Leguminous vegetables, shelled or unshelled, fresh or chilled	737	37	82	189	43
Cucumbers and gherkins, fresh or chilled	25	7	60	5	24
Cabbages, cauliflowers, kohlrabi, kale and similar edible brassicas, fresh or chilled	84	41	43	25	22
Tomatoes, fresh or chilled	8	66	32	27	18
Roots and tubers of manioc, arrowroot, salep, Jerusalem artichokes, sweet potatoes and similar ...	5	14	12	33	17
Lettuce "Lactuca sativa" and chicory "Cichorium spp.", fresh or chilled	6	4	3	2	5
TOTAL VALUE	7,239.00	9,498.00	9,758.00	12,647.00	12,515.00

Source: International Trade Centre (ITC) (2015)

Mumba et al (2015) further argue that “the production and supply of local vegetables in formal markets falls far below the quantities and quality standards demanded by the market through major retail chain stores such as Pick n Pay, Shoprite, Food Lovers Market and Fruit and Veg City”. As an example, Food Lovers Market, a South African retail chain, at its East Park Mall, procures only ten percent (10%) of its vegetable requirement from local Zambian smallholder farmers with ninety percent (90%) of produce sold in the shop is imported from South Africa (Mumba et al, 2015). This scenario is mainly propelled by the fact that these retailers require private standard adoption along produce supply chains while smallholder farmers in Zambia do not have the capacity to supply the formal markets due to capital constraints, lack of knowledge of production and standard requirements along with entrepreneurial skills required for them to benefit positively from the production and marketing of fresh horticultural produce to such formal markets.

While the discussion above highlights that fresh produce markets in Zambia present opportunities that can benefit smallholder farmers, this can only be achieved when the following production and marketing barriers are tackled:

- The inability by smallholder growers to schedule and produce sufficient quantities of the required produce of an acceptable quality.
- Small scale farmers difficulties in meeting supermarket standards and protocols where applied, and,
- The inability by smallholder farmers to transport produce to the customer.

Unless if the smallholder farmers are organised to engage efficiently with target markets (e.g. supermarkets, hotels, open markets etc), they are likely to be excluded from participating in horticulture value chains. It is also important to note that markets are unable or unwilling to manage a large number of supply and financial relationships with smallholder farmers due to the fragmented nature of the production base and the increase in transaction costs (see for example Barham and Chitemi, 2009; Barham, 2007 and Sartorius, 2003).

1.3 Research Focus

Several studies (e.g. Markelova et al, 2009, Barham and Chitemi, 2009; Hichaambwa, 2010) emphasise the importance of farmers institutions(e.g. Farmer groups and/or marketing cooperatives) not only as a strategy to promote collective actions and bulking of produce, but also to improve smallholder farmers access to critical business development services such as finance, extension and relevant market information required to increase their farm productivity and competitiveness when engaging with more formal markets. The *Zambian Government Agricultural Policy 2004 – 2015* identified the promotion and strengthening of cooperatives and farmer organisations as a vehicle for agricultural development. This policy position was also reinforced in the revised *National Agricultural Policy (2012 – 2030)* which stresses that weak marketing institutions serving small scale farmers have failed to adequately organise farmers to pool their procurement of inputs and marketing of products to reduce per unit cost (Government of the Republic of Zambia, 2011). Marketing through rural producer organisations is generally considered to be a means through which small scale farmers can overcome constraints to engage competitively with markets (Mtonga, 2012; Getnet and Anullo, 2012). One of the key services that a Produce Marketing Organisation is expected to provide to smallholder farmers is regular market information related to produce volumes and quality demanded by markets. Equally important is information regarding produce market prices. As Haile et al (2015) explains, “economic agents use different information when making decisions on their economic activities”. The provision of agricultural marketing information is intended to increase the efficiency of agricultural markets and to contribute towards overcoming issues of market failure caused by information asymmetry (Ferris et al, 2014; Magesa et al, 2015). Access to reliable market information for instance assists farmers to form better price expectations thereby improving their production decisions (Haile et al, 2015). The regular dissemination of market information such as commodity prices assists farmers to monitor market conditions, make better decisions on what and where to sell produce and to negotiate for improved prices with traders (Ferris et al, 2014). Magesa et al (2014) argue that due to the lack of market information such as price of produce, quality and quantity of produce required by the markets, smallholder farmers resort to negotiating prices of their produce based on information provided by traders which significantly reduces their bargaining power and promotes the development of uncompetitive markets. David –

Benz et al (2016) also explains that market information improves farmer's market power and strengthens farmer's organisations voice.

This study seeks to investigate the effectiveness of farmer owned businesses (particularly cooperative managed produce marketing organisations) to provide smallholder farmers with the market information that they require to improve their competitiveness on their market. Given the increasing emphasis on food safety and quality standards in contemporary agribusiness value chains, this study will investigate the ability of a farmer owned produce marketing organisation to disseminate information related to produce standards demanded by some value markets as well as information on produce volumes and prices.

The study also reviews conditions that promote the entrenchment of trust in the working relationship between a cooperative managed produce marketing organisation and smallholder farmers supplying required horticultural produce for specific target markets. Trust in exchange relationships has in the past been hypothesized to be a valuable economic asset (Morgan and Hunt, 1994; Kwon and Suh, 2004; Dyer, 1997) and participants in exchange who trust one another reportedly obtain a variety of performance related benefits including lower transaction costs and increased flexibility between the exchange partners to respond to market changes (Sako, 1991; Poirier, 1999), lower opportunism (Batt, 2003; Kirsten and Sartorius, 2002; Andrade and Castro, 2007; Wicks, Berman and Jones, 1999), along with greater commitment and loyalty which results in less propensity to switch (Batt, 2003; Kirsten and Sartorius, 2002). This relationship can be described in the context of the Theory of Change hypothesised for this study (Figure 3).

Research Study - Theory of Change

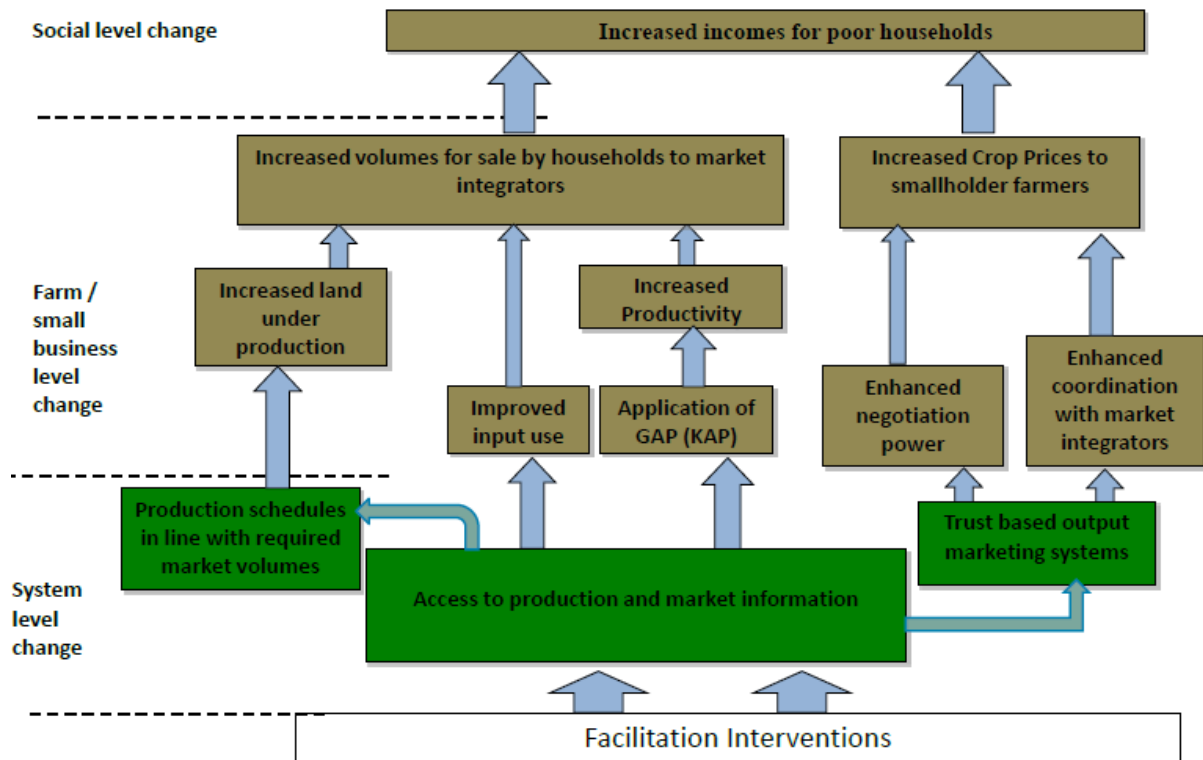


Figure 3: Research study theory of change

The Theory of Change presented above is supported by various contemporary scholastic contributions. For instance, Ferris et al (2014) emphasise the need to review how smallholder farmers can access and use market information to improve their market decision making and support group marketing. In order to assist smallholder farmers to commercialise their production and marketing activities, there is need to secure means through which smallholder farmers can access market information services (Haile et al, 2015). Furthermore, Markelova and Meinzen – Dick (2009) contend that by acting collectively through farmer institutions, smallholder farmers increase their opportunities to reach larger domestic, regional, and international markets. In these cases, acting collectively enables smallholder farmers to deal with information, transportation and storage constraints, acquire technologies and certificates to comply with market requirements and to reach the necessary scale to supply the desired quantity of their products.

This leads to two hypotheses for the study: the first relates to market linkages while the second is linked to the development of trust between small-scale farmers and supply chains.

1.3.1 Linking Smallholders to Value Chains

As stated earlier, a number of factors conspire to make smallholder participation in value chains problematic; however, put simply, smallholders need to have an understanding what crops to grow; the safety and quality standards demanded by the market; market prices; and, volumes required. Given such information, smallholders can make rational decisions on what to grow and when to supply. Given this, the first hypothesis is set as a null hypothesis in three parts:

Hypothesis 1(a): Linking small scale commercial farmers to a produce marketing organisation has no effect in enhancing the farmer's access to information on produce food safety and quality standards required by contemporary horticulture value markets.

Hypothesis 1(b) Linking small scale commercial farmers to a produce marketing organisation has no effect in enhancing the farmer's access to information on produce prices offered by value markets.

Hypothesis 1(c) Linking small scale commercial farmers to a produce marketing organisation has no effect in enhancing the farmer's access to information on produce volumes required by horticultural markets.

1.3.2 Role of Mutual Hostage Taking Investments

Mutual hostages are dedicated investments including assets, human resources, specialised strategies and capital equipment that exchange partners cannot easily move and redeploy to other transacting relationships (Yaquib et al., 2010). Mishra et al (1998) argue that regardless of efficiency concerns, firms make investments in transaction specific activities as a means to signal good will and honourable intentions to their partners in the exchange relationship with respect to planned trading activities. While this practice has some costs, payoffs accrue in the form of trust development, commitment and enhanced cooperation. This is linked to the view presented by Kirsten and Sartorius (2002) that provision of a range of quality services by an agribusiness firm

facilitates the development of closer working relationships between the firm and farmers. It thus could be argued that investments in transaction specific activities in turn strengthens small scale farmers trust in the market integrator involved in the exchange (and vice versa). As Yaqub et al., (2010) argue, “by developing mutual hostages, the partners create what economists call ‘self-enforcing contracts’ because each party loses an incentive to cheat the other and instead gains powerful motive to stay in the relationship and make the most of it”. Furthermore, it could be argued that smallholder farmers commitment to invest in the development of agribusiness activities increases with their level of trust of the market integrator. This leads us to the second positivist hypothesis that is articulated in two parts:

Hypothesis 2a: Site specific investments made by an market integrator to facilitate the provision of business development services to contracted growers result in an increase in the level of trust of the integrator by small scale commercial farmers.

Hypothesis 2b: Small scale commercial farmer’s motivation to participate in certification programmes is related to their level of trust in the market integrator.

1.3.3 Research Objectives

Given the above discussion and hypotheses, this study seeks to contribute knowledge and deeper understanding with a view to:

1. Contribute knowledge on how farmer owned businesses (particularly cooperative managed Produce Marketing Organisations) can be strengthened to provide business development services (market information) to smallholder farmers.
2. Determine if small scale farmer’s motivation to comply with food safety and quality standards (meeting the produce specifications required by the target markets) is related to the level of trust that they have in their working relationships with a Produce Marketing Organisation linking them to such target horticultural markets.
3. Present recommendations that development practitioners (Governments, Non-Governmental Organisations, Donor institutions and the Private Sector) need to consider when developing interventions designed to facilitate inclusion of small scale commercial farmers in horticulture value chains.

1.4 Research Strategy

The conceptual framework adopted for this research study is rooted on two pillars; (i) value chain analysis and (ii) the sustainable livelihoods approach.

1.4.1 Value Chain Analysis Approach

Value chains are organized linkages among groups of producers, traders, processors and service providers who join together in order to improve productivity and the value added of their activities. By joining together, the actors in a value chain increase competitiveness which is maintained through chain innovation. The limitations of each single actor in the chain are overcome by establishing synergies and governance rules aimed at producing higher value. The main advantages to commercial stakeholders derived from being part of an effective value chain is the ability to reduce the costs of doing business, increase bargaining power, improve access to technology, information and capital, and, by doing so, innovate production and marketing processes in order to gain higher value and provide higher quality to the customers compared to other chains (William Grant, 2015).

A value chain approach focuses on the interaction of actors along each step of the system (from raw material producers to consumers) as well as the linkages within each set of actors. This approach thus considers trade relations as being part of a series of networks of input suppliers, producers, traders, processors and retailers, whereby knowledge and relationships are developed to gain access to markets and suppliers. The success of stakeholders in adding value to their production and marketing activities lies in their ability to access and participate competitively in these networks. Several concepts are central to the understanding of value chains including the concepts of governance, innovation, distribution and networks. The understanding of governance implies understanding of who controls the power relationships within the chain. Governance issues are of increasing importance in agriculture, given the greater emphasis on product differentiation, food safety and product standards required in a competitive market environment. Such issues place a premium on strong linkages within the value chain between agents in the chain. While individual and isolated farmers may be unable to capture value added vis à vis traders and/or processors, associations of producers may be in a better position to access technology, credit and market opportunities (Markelova et al, 2009).

In the context of value chain analysis, innovation takes the form of either developing new, higher-value market niches or expanding the range of activities employed. Governance structures are important to understand how such innovation by suppliers occurs and the role played by government and other institutions. The understanding of value chains also depends on knowing the distribution of benefits within the chain. This refers to the amount of benefits obtained by various actors in the chain as well as ways actors, through the differentiation of services and roles, improve their position within the chain. This research study considers the Value Chain Approach (VCA) as providing three distinct advantages in evaluating opportunities for smallholder farmers' inclusion in horticulture value chains;

1. It enables the researcher to gain a deeper understanding of the dynamics governing the relations between the smallholder farmers and other actors in the sector. This will enable the study to explain how the smallholder farmers and their market integrator's business behaviour impact on the value chain efficiency and competitiveness.
2. It allows for the identification of critical bottlenecks within the chain thus enabling the study to recognize key constraints relating to the smallholder farmers participation and inclusion in horticultural markets; and
3. It provides a tool to establish linkages with the various actors of the value chain. The linkages thus established could be a powerful mechanism to build consensus around key policy changes in the sector, or around key features of future supply chain structures and relationships.

1.4.2 Sustainable Livelihoods Approach

The main premise of the sustainable livelihoods approach denotes that the basic building blocks of people's livelihoods are the resources and assets they have or are able to obtain from different sources. People combine their assets (human, social, natural, financial and material) in many different ways to generate positive livelihood outcomes (Figure 4). Material capital is taken to include basic public infrastructure and physical services as well as private (household) domestic and productive assets. Studies have shown that a lack of basic infrastructure and producer goods is a core dimension of poverty and without the help of tools and equipment, peoples' full productive potential cannot be realised (see for example Ashley and Carney, 1999; Krantz, 2001).

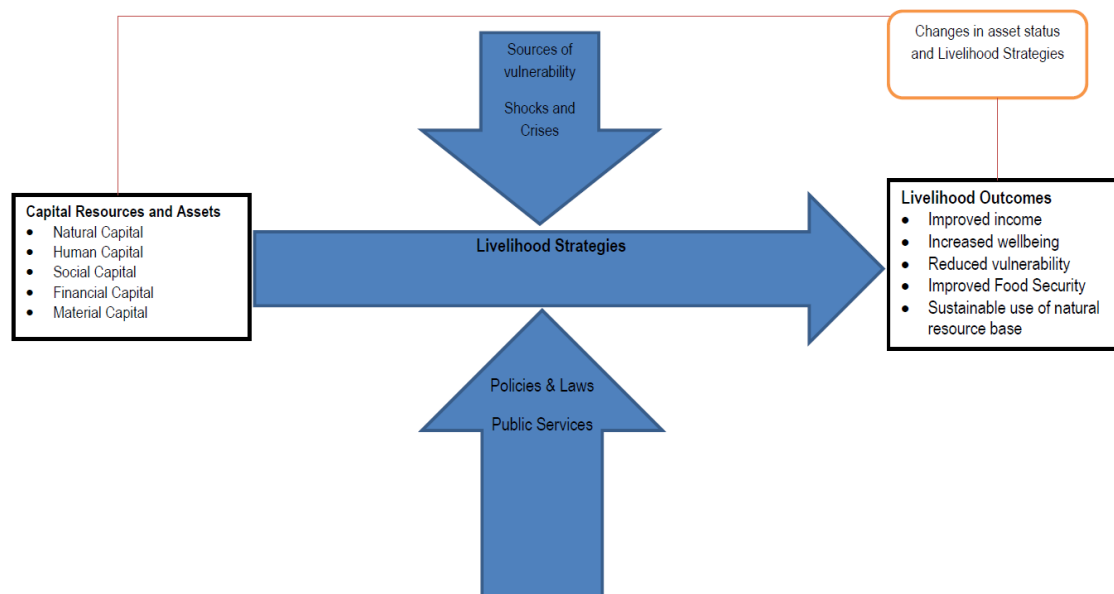


Figure 4: Sustainable Livelihoods Model

Adapted from DFID, 1999

In assessing the impact of public infrastructure and services on livelihoods, it is necessary to consider questions of accessibility, affordability and quality. For instance, energy supplies should be both clean and affordable while domestic water supplies should be of adequate quantity and quality. Productive assets such as agricultural equipment and means of transportation can have a direct impact on improving income. Some productive assets, such as larger agricultural equipment or processing units, can be accessed through cost-sharing (group ownership), rental or by paying a fee for such services.

The term 'livelihood strategies' is used to denote the range and combination of choices and actions people take in using and managing these capital resources and assets in order to increase their income and to improve their well-being (Krantz, 2001). Livelihood strategies include the choices and decisions people make about things such as:

- Which capital resources and combinations of assets they invest in;
- The range of different income generating activities they pursue;
- How they manage to preserve existing assets and income;
- How they obtain and build up the necessary knowledge and skills to make a productive living; and,
- How they cope with risk and respond to shocks and crises of different sorts;

This study considers the sustainable livelihoods framework as suited to facilitate understanding of the different ways in which the smallholder farmers combine and use their different resources and capabilities in order to make a living and to attain their goals and aspirations. This framework will enable the study to determine what motivates the smallholder farmers to behave as they do (including their business behaviour and relationships) and what their priorities are.

1.5 The significance and rationale of this study

This study contributes knowledge which can be used towards development of interventions aimed at promoting greater inclusivity of small scale farmer's participation in value horticultural markets. The study takes the stand that the challenges faced by small scale farmers to participate in such value chains can be mitigated and/or overcome by arrangements facilitating collaboration between small scale producers and Produce Marketing Organisations acting as intermediaries linking the farmers to contemporary and more formal value markets. Often this is in the form of help to secure required market information and to meet supply chain standards requirements. Several studies (e.g. Kirsten and Sartorius, 2002; Hansen et al., 2002; Batt, 2003; Schulze and Spiller, 2006) have highlighted how linking small scale farmers to intermediaries enhances opportunities for their integration in value supply chains through improved access to agricultural extension, market information, credit and logistical support for the transportation of produce amongst other services. This emphasis on forging closer working relationships between the small scale farmers and integrators in a way represents progression from earlier studies (e.g. Reuben et al., 2007, Lu et al., 2008) that focussed solely on the application of better production and crop management practices or on the introduction of improved incentives to enhance farmer's willingness to invest in more advanced production methods. Far less attention was provided on the options to improve coordination and commercial relationships (including trust) among the farmers and between farmers and their buyers as an alternative strategy to reduce transaction costs, upgrade produce quality, expand markets and improve supply chain performance.

The need to focus research studies on value chain governance systems and relationships between actors is critical as there is growing recognition that relationships play an important role in supply chain management (Kwon, 2004). Getnet and Anullo (2012) in

a case study focussing on linking small scale farmers to markets in Ethiopia, emphasise the importance of farmer owned businesses including rural cooperatives to support rural livelihood development and poverty reduction. Despite the growing importance and recognition of the need to promote cooperative sector development, Getnet and Anullo (2012) lament that there is lack of wider and systemic analysis to produce sufficient empirical evidence on the livelihood development and poverty reduction impacts of cooperatives. At the same time, trust based relations between economic agents have been seen as part of the competitive advantage of manufacturing enterprises in Germany, Japan and parts of Italy during the 1970s and 1980s (Sako, 1992; Putnam, 1993; Lane and Bachmann 1996 cited by Humphrey and Schmitz, 1998). As Humphrey and Schmitz (1998) explain, debates on developing countries increasingly have raised the question of trust such that in 1996, the World Bank set up a group of experts to study the relevance of social capital, of which trust is a central component, in development initiatives. It is in this respect that Knack and Keefer (1996) reviewed the link between levels of trust and economic growth. Furthermore, Humphrey and Schmitz (1998) contend that trust is fast “emerging as the new missing factor that explains why some countries or regions develop rapidly and others lag behind”.

There is no doubt that farmer owned businesses need to be structured in a manner that allows them to provide efficient agribusiness development services to small holder farmer members. Produce Marketing Organisations (including farmer cooperatives) need to enable smallholder farmers to forge closer and more collaborative ties with other value chain actors as a strategy to enhance their competitiveness in an increasingly turbulent global agribusiness environment which continues to focus attention on the formation of effective relationships between the value chain actors. This study does not seek to suggest that the provision of market information to smallholder farmers nor that trust based relations are the only pre-requisites to enhance smallholder farmer’s competitive participation in markets. Rather the study seeks to explore some of the limitations of farmer owned businesses in providing agribusiness development services to smallholder farmers and also to review the factors that allow trust to grow (or fail to grow) and how it can be promoted between the exchange partners, in this case small scale growers and cooperative managed produce marketing organisations.

1.5.1 Relevance of the study to Zambia

The study objectives are in line with the Zambian Government's vision, policies and strategies for the development of the Zambian agricultural sector as detailed in the National Agricultural Policy (2012 – 2030). The government, in this policy document, commits itself to promote development of an efficient, competitive and sustainable agricultural sector, which assures food security and increased income for farming households. This objective is linked to the government's overall goal to strengthen agricultural activities as a vehicle to “achieve poverty reduction and economic growth” including reduction of the national economic dependency on copper mining, currently the main back-bone of the country's economy but which often suffers from price fluctuations on the world market. In this respect, this study, which seeks to strengthen participation of small scale farmers in value horticultural markets, is at the centre of the country's economic development priorities.

The importance of this study also needs to be examined from the acknowledgement that, Zambia, a large landlocked country with a population of around 13 million people (World Bank, 2012), is still very much dependant on agriculture. While the contribution of the agricultural sector to the national Gross Domestic Product (GDP) is pegged at 19.8%, agriculture employs over 70% of the national working population (Global Finance Magazine, 2015).

Graffham and MacGregor (2008) cited by Gibbon and Lazaro (2010) indicate that 95% of the small scale farmers in Zambia who were involved in fresh vegetable export supply chain in 2003 had been eliminated by 2006 particularly following the collapse of Agri-flora, by then Zambia's biggest horticultural export company, which contracted thousands of small scale farmers located mainly within a 50km radius of Lusaka - the comparative case study location. This underlines the importance for conducting further research to understand how sustainable business arrangements can be established to encourage the participation of small scale farmers in value markets. The study objectives are also in harmony with the strategic policy frameworks of key institutional donors to the country providing development assistance and economic technical support to the Zambian government. As an example, the United States Agency for International Development (USAID) – Feed the Future initiative for Zambia highlights one of its core

objectives as the need to strengthen trade (linking communities to markets as a strategy to reduce development aid) (USAID, 2011). Similarly, the European Union Zambia National Indicative Programme (2014 – 2020) under the 11th European Development Fund focuses on pro-poor growth oriented sectors that create employment and income opportunities for the poor, including in particular rural development, agriculture, economic infrastructure and human resources development (European Union, 2014). As mentioned earlier, however, many of these interventions have embedded formal market requirements including smallholder training in private market standards (including contract farming). Many of the target smallholder farmers however remain with capacities too weak to be able to effectively engage with these markets and the markets they can access at best will be based on 2nd party audits only.

Linking small scale farmers to markets has been cited as a vehicle to facilitate the transformation and modernisation of traditional farming systems (Sartorius, 2003) and Zambia in particular has enormous potential for the development of a viable agribusiness industry involving small scale farmers given its developing infrastructure as well as the growth of the food processing industry in the country (Mumba et al, 2015).

This study acknowledges that various efforts to promote small-scale farming and access to markets have been noted in the past decade. However, it remains evident that much more needs to be done to make a positive difference to develop interventions that are aimed at greater inclusivity of small scale farmers in value markets as integration will likely only happen when smallholder farmers fully participate in agricultural commercial value markets and become commercial themselves.

1.6 Outline of the Thesis

This study explores the relationships between smallholder farmers and the conditions required to strengthen their participation in horticultural value chains and the structure of the thesis is highlighted (Figure 5). This chapter has introduced discussion on the importance of smallholder farmer's inclusion in horticultural value chains. Particular emphasis has been made on the importance of smallholder farmer's institutions, the need to strengthen smallholder farmer's access to market information, the need for smallholder farmer's collective action and development of trust between the smallholder

growers and market integrators. The chapter also introduces the research aims, supporting research questions as well as the two hypotheses to be tested. It also provides a brief overview of the research strategy and the locations where the research study was conducted in Zambia.

Chapter 2 provides a theoretical analysis of inclusive business models with particular emphasis on smallholder farmer cooperatives in sub Saharan Africa. The analysis provides a critical review of various business models that can be applied to promote inclusive agribusiness. The chapter also reviews the history of cooperatives in sub Saharan Africa and the main lessons that are emerging regarding the effectiveness of cooperatives in linking smallholder farmers to contemporary value markets.

Chapter 3 examines the theoretical and empirical literature on trust and supply chain governance. The meaning and various forms of trust as well as its role in the dissemination of market information, technology and extension adoption and resolution of grievances will be discussed. This chapter will also link the discussion on trust to theoretical frameworks on value chain and the sustainable livelihoods approaches.

Chapter 4 introduces the main case study location (Livingstone). Results from a baseline survey conducted by the study on the production and marketing opportunities and constraints of small-scale vegetable farmers in Livingstone and Lusaka are also presented. This analysis is provided to generate a clearer picture of the social, economic and political economy factors that affect inclusion of smallholder farmers in the case study location (Livingstone) with a comparison to Lusaka.

Chapter 5 presents details of the methodology that was used to test the hypotheses under this study. The study results are presented and examined drawing comparison to the conclusions made by other scholars in similar studies.

Chapter 6 provides closure to the study by revisiting the aims and objectives set in Chapter 1 and draws conclusions in relation to the capacity of Farmer Owned Businesses to provide business development services required by their membership to participate in horticultural value chains. Final discussion and recommendations are also provided on

how trust based relationships can be strengthened between small scale farmers and their integrators (in this case a cooperative managed Produce Marketing Organisation).

1.7 Caveats

This study focuses on small scale farmers in Livingstone in the southern province of Zambia. These farmers are not necessarily representative of the total population of Zambian farmers. Consequently, generalisation of the study results may not be possible without taking note of the limitations. The study also focuses on the importance of farmer's institutions (Produce Marketing Organisations) and the development of trust as a vehicle to promote smallholder farmers inclusion in horticultural value chains. This focus might provide the impression that provision of business development services (market information) to smallholder farmers by their marketing institutions and the entrenchment of trust between smallholder farmers and their market integrators are the sole factors required for the sustainable inclusion of small scale farmers in agribusiness markets, while in fact, these factors form part of a range of enabling conditions required to ensure inclusive agribusiness growth. The study takes note of other critical market participation enablers such as access to finance, infrastructure and a conducive policy environment as requirements to promote sustainable inclusive business. These factors are however not the core focus of this study.

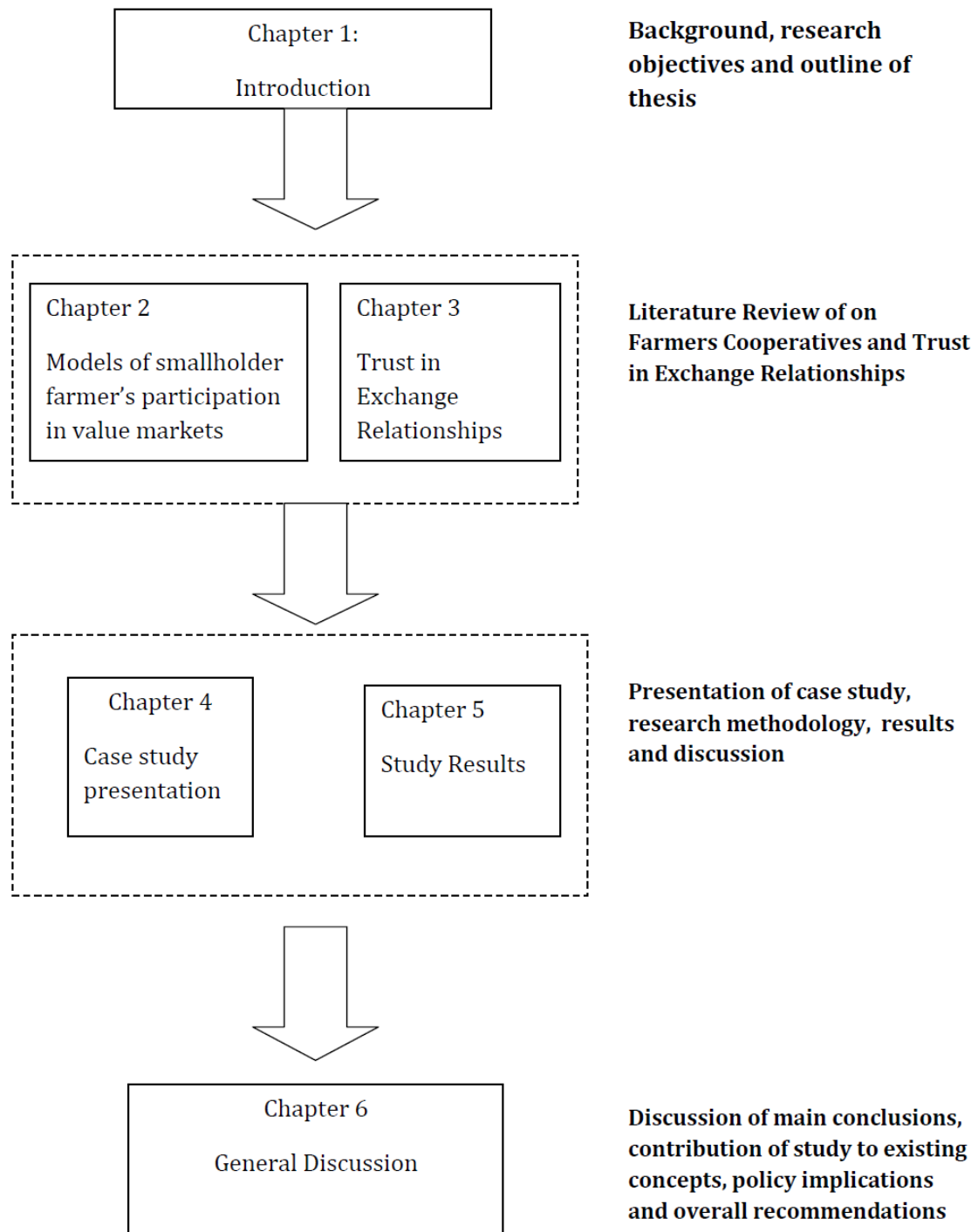


Figure 5: Outline of the Thesis

Chapter 2: Linking Smallholder Farmers to Markets

This chapter explores different business models of farmer co-operation and association in the context of linking small scale farmers to agribusiness supply chains, principally in Sub-Saharan Africa. It further analyses the strengths and limitations of formal farmer groups under farmer co-operative models.

2.1 Background and Context

Recent years have witnessed renewed interest in strengthening smallholder farmer's participation in agribusiness value chains. Various scholars (e.g. Vorley et al, 2008; Vermeullen and Cortula, 2010; Paglietti and Sabrie, 2013; Franz et al, 2014) argue that small scale farmer's participation in agribusiness value chains, when effectively structured and implemented, is a viable strategy for increasing smallholder farmers' incomes and consequently reducing global poverty particularly in developing economies. Franz et al (2014) further explains that while nongovernmental organisations and development agencies consider inclusive markets as having the potential to reduce poverty, private sector companies' look upon smallholder agriculture as a widely untapped land resource for sourcing of agricultural raw materials and as a sales market for agricultural inputs. Given this wide spectrum of benefits that could arise to the agribusiness actors and stakeholders, various scholars (e.g. Vorley et al, 2008; Vermeullen and Cortula, 2010) have emphasised the need for agribusiness models to be farmer inclusive and more pro-poor. Many development oriented programs have thus increasingly delivered interventions aimed at strengthening smallholder farmer's economic position and wellbeing through establishment of commercial linkages with other agribusiness value chain actors; however, what are the relative merits of these interventions? This chapter has two main objectives:

- (a) To review literature on the business models that provides opportunities for smallholder farmer's participation in agribusiness value chains. A broad range of business models are discussed. The effectiveness of these models is assessed and key lessons that have been learnt are summarised.
- (b) To review literatures on smallholder farmer's cooperatives in sub Saharan Africa. The chapter reviews the history of the cooperative movement and highlights the main lessons learnt and interventions currently being promoted to strengthen

Farmers Cooperatives position and effectiveness to link their membership to markets.

As such, this chapter builds up critical background information that is central to the case study presented in Chapter 5 which involved interventions seeking to link small scale farmers to horticultural markets through a Produce Marketing Organisation that was managed by the Livingstone Farmers Cooperative Society in Zambia. The chapter also has relevance to the comparative case study of farmers around Lusaka where the majority of smallholders are cooperative members. The conclusion to this chapter provides recommendations relating to promotion of inclusive business within a sub Saharan Africa context. Particular emphasis is placed on how cooperatives can be positioned as market actors with the relevant capacity to facilitate sustainable commercial relationships between small scale farmers and other agribusiness actors in a developing country context.

2.2 Importance of Inclusive Business

As demand for agricultural products continues to grow around the world, partnering with smallholder farmers offers agribusiness companies significant opportunities to grow their businesses (GIZ, 2012). Indeed, the current trend in agribusiness development theory places a special focus on smallholder farmers and as Franz et al (2014) observe, “with growing world population and an increasing scarcity of resources, supporting smallholder agriculture has become crucial for increasing agricultural productivity. Helping smallholders integrate themselves into modern domestic or even global value chains is an important part of this strategy, which ultimately results in the commercialisation of smallholder farming”. Endeve and HERi Madagascar (2015) conclude from their findings in Madagascar that agribusiness private sector companies are increasingly acknowledging, albeit with some constraints, the potential to source agricultural products and to establish increased collaboration with smallholder farmers in that country. In the same vein, Wiggins and Keats (2014) argue that the question of how to link the private sector, with capital, knowhow and contacts to small scale farmers (with land and labour) for mutual growth and development has become increasingly important. Most donor institutions such as the United Kingdom Department for International Development (DfID), the United States Agency for International

Development (USAID) and the Swiss Agency for International Development and Cooperation (SDC) all acknowledge the increasing importance of “Making Markets Work for the Poor³” which has given renewed impetus and promotion of market systems development in poverty reduction programmes.

There are various considerations that have to be taken into account by private sector entrepreneurs when seeking to establish commercial relationships with smallholder farmers. Vorley et al (2008) provides a critical review of the business case for and against private sector companies sourcing produce from smallholder farmers (Table 3).

Vorley et al (2008) analysis highlights business benefits such as improved access to land to expand production activities and increased political and social capital which accrues to private sector companies from commercial relationships with smallholder farmers. There are many challenges however which limit the development of commercial relations between the private sector and smallholder farmers such as: the low level of skills of farmers; limited infrastructure such as equipment for irrigation, roads and appropriate storage; and, the lack of access to inputs which often results in low and varying quality of products. In addition, there is a transactional barrier where a few contracts with larger farmers will always be a lower cost compared to multiple contracts with several smallholders unless if they are organised into groups. Various business models have emerged over the years with a view to improve the efficiency and to mitigate the risks associated with sourcing produce from smallholder farmers. These models have focussed mainly at overcoming the costs and risks associated with producer coordination, market coordination, intermediation, service and finance provision, information and knowledge management (Vorley et al; 2008).

³ See for example <http://www.enterprise-development.org/implementing-psd/market-systems/>

Table 3: Business case for and against sourcing produce from small scale farmers.

For	Against
<ul style="list-style-type: none"> • Good corporate responsibility and gesture of community good will • Strengthens political capital of the sourcing business • Provides an opportunity for the sourcing company to access donor funding to establish and / or to scale up the enterprise. • Smallholder farmers often provide premium quality products. • Smallholder farmers have access to land – a resource which is often difficult for business to secure. • Multiple smallholder farmers provide the sourcing company with an opportunity to spread its portfolio geographically thereby reducing the risks related to undersupply as well as localised pest and disease problems. • Contract farming of smallholder farmers allows the sourcing company to adjust the scale of production without incurring fixed costs. 	<ul style="list-style-type: none"> • Negotiation time and costs high • Higher transaction costs and risks associated with sourcing produce from dispersed farmers. • Varying produce quality from different smallholder farmers. • Difficult to coordinate smallholder farmer's production activities to ensure consistent supply of required produce volumes meeting defined quality attributes. • Failure to honour agreed supply contracts. Difficult to enforce legal penalties in the event of smallholder farmer's failure to fulfil contract requirements. • Smallholder farmers have weak capacity to comply with rising food safety and quality standards demanded by contemporary markets. • Smallholder farmers often lack appropriate produce packaging materials to preserve produce quality. • Weak systems for the traceability of produce.

Adapted from Vorley et al (2008)

Organisation of production is important to ensure mitigation of the risks and costs associated with dispersion of the producers, diseconomies of scale, poor access to information, technology, finance, inconsistent volumes and quality, lack of traceability and management risks. Indeed, as Vorley et al (2008) explain “in view of the lower transaction costs and the possibility of more effective capacity transfer, private companies often prefer to work with organised farmers rather than individuals despite the increased bargaining power that the groups can enjoy”.

Vorley et al (2008) classifies existing business models for linking smallholder farmers to agribusiness markets into three general categories, Producer Driven Models, Buyer Driven Models and Models of Intermediation (Table 4).

Table 4: Organisation of smallholder farmer’s production activities

Type	Driver	Objective
Producer Driven	<ul style="list-style-type: none"> • Small scale farmers themselves 	To improve their access to value markets in order to secure higher market prices and consequently improve their income.
Buyer Driven	<ul style="list-style-type: none"> • Processors • Exporters • Retailers 	To assure consistent and quality supply of raw materials for their commercial operations.
Intermediary Driven	<ul style="list-style-type: none"> • Traders, Wholesalers and other traditional market actors 	To secure consistent sufficient volumes of produce to supply to identified discerning customers.
	<ul style="list-style-type: none"> • Non Governmental Organisations and other support agencies 	To improve smallholder farmers economic position in the community by “making markets work for the poor”.
	<ul style="list-style-type: none"> • National and Local Governments 	To facilitate community development in line with set government policies and priorities.

Adapted from Vorley et al (2008)

In order for the commercial relationships between smallholder farmers and other agribusiness value chain actors to be sustained, it is critical to have a viable business model for the intervention. Vorley et al (2008) define a business model as “the way by which a business creates and captures value within a market network of producers, suppliers and consumers”. Vermeullen and Cortula (2010) provide a simplified definition of a business model as “what enables a company to make money”. The extent to which a business model involves partnerships with local farmers or the community and the extent to which the value generated is shared among the partners are indicators of the degree of inclusiveness of the model (Endeva and HERi Madagascar; 2015). In this regard, Vermeullen and Cortula (2010) go on to identify four criteria that can be useful to access the degree of inclusiveness of a business partnership: ownership, voice, risk and reward (Table 5).

Table 5: Criteria for accessing inclusiveness in business partnerships

Ownership	This relates to the structure of the ownership of the business (equity shares) and of key project assets.
Voice	This relates to the ability of each stakeholder under the partnership to influence key business decisions, grievances and accessing information related to the business.
Risk	This relates to the manner in which the business partners share commercial risk related to the production, supply and market development. This also includes wider risks such as political and reputational risks.
Reward	This relates to the manner in which economic costs and benefits are shared between the business partners as well as price setting and finance arrangements.

Adapted from Vermeullen and Cortula (2010)

Vermeullen and Cortula (2010) identify six business models that are mainly used to connect smallholder farmers to agribusiness markets. These business models are:

1. Contract Farming
2. Management Contracts
3. Tenant Farming and Share cropping
4. Joint Ventures
5. Upstream and downstream business links
6. Farmer Owned Businesses

Evidence from literature indicates that the above six models are not exhaustive. As an example, McIndoe-Calder (2012) identifies Government Owned Agribusinesses as another model which is regaining traction in some countries. In this respect “ although African governments had mainly moved out of the agribusiness sector after structural adjustment in the 1980s and 1990s, some governments are considering moves to return to this sector ...”McIndoe-Calder (2012). Indeed, while these Government Owned Agribusinesses are often established to provide smallholder farmers with both secure market outlets for their agricultural surplus and timely supply of affordable inputs, these government controlled enterprises are however often inefficient and ultimately impede agricultural development for smallholders rather than facilitating its advancement (McIndoe-Calder, 2012).

The following discussion will briefly review the six agribusiness models identified by Vermeullen and Cortula (2010) with particular emphasis being focussed on Farmer Owned Businesses (particularly Produce Marketing Organisations controlled by cooperative organisations) as this thesis case study is based on this model. In addition, specific case study examples, mainly from Endeva and HERi Madagascar (2015), are used to illustrate relationships.

2.2.1 Contract Farming

There are several definitions presented by various scholars on contract farming. Paglietti and Sabrie (2013) define contract farming as referring to long term supply agreements (3 – 10 years) between smallholder farmers and agribusiness processing and / or marketing companies for mutual gain. Gradl et al (2012) define contract farming as “a forward agreement specifying the obligations of farmers and buyers as partners in business”. Normally, price and supply arrangements (date, quantity and quality) are agreed before-hand (Paglietti and Sabrie, 2013) and this point is further explained by Vermeullen and Cortula(2010) who take note that “the agreements usually specify the purchase price of the required produce and may also include details regarding produce delivery dates, required volumes and quality”. In most cases, the buyer is usually an agribusiness processing company which commits to supply upfront inputs such as seed, fertilisers, pesticides as well as technical extension. The cost of these inputs is normally charged against and deducted from the final purchase price.

Eaton and Shepherd (2001) explain that contract farming normally follows one of five models depending on the product that is being sourced, the resources of the buying company and the intensity of the relationship between the farmers and the company (Table 6).

Table 6: Contract Farming Models

Model	Description
The Informal Model	This involves informal production contracts between agribusiness companies and smallholder farmers. The business arrangement is usually seasonal and involves a greater risk of side selling. The services of the buyer are in most cases limited to the supply of inputs and produce quality control.
The intermediary model	In this model, the agribusiness company (buyer) subcontracts an intermediary to facilitate the supply of required agricultural products. As such, the intermediary in turn agrees on a deal with the contracted farmers and also normally provides the services and inputs required for production.
The multi partite model	This model involves partnership between three different actors normally the contracted smallholder farmers, the buying company and either a public institution / programme or financial institution. The financial institution takes up responsibility to provide the financial package required for production inputs. The loan amount is then deducted through mechanisms agreed by the parties when produce is supplied to the buyer.
The centralised model	This is the most common model whereby the agribusiness processor directly sources required products from a large number of smallholder farmers. The process is vertically coordinated and the agribusiness company assumes control of the production chain by providing the inputs, providing extension support and overseeing the harvest process.
The nucleus estate model	Under this model, the buyer has a dual strategy which involves sourcing required produce from own estates and also from contracted smallholder farmers. In the majority of instances, the contracted smallholder farmers are located from communities surrounding the agribusiness company's estate farms as this strategy allows for easier monitoring and produce collection at harvest. This is also the model where the nucleus estate could be government owned and managed

Adapted from Eaton and Shepherd (2001)

In selecting the most appropriate model for smallholder and agri-business relationships, there are a number of stages of engagement between the prospective partners. Ganguly (2013) explains that for contract farming initiatives four development stages have been identified (Table 7).

Evidence as to whether contract farming benefits the buying companies and/or the smallholder farmers involved is mixed. Indeed, as Guo et al (2007) argue “contract farming has a checkered history throughout the world”. While contract farming arrangements often result in higher quality, safer food with lower production and marketing costs, scholars opposed to this model argue that large businesses generally exploit the low labour cost of smallholder farmers and that these companies in most cases transfer the majority of the production risks to the smallholder farmers (see for example, Paglietti and Sabrie, 2013). In addition, there are also strong arguments that the poorest smallholder farmers are often excluded from contract farming schemes resulting in greater inequality and social tensions which are often generated by land grabbing by the elites within the smallholder farmers’ communities. It is in this respect that Guo et al (2007) argue that contract farming can lead to “economic serfdom for peasant farmers or a food system that meets the economic objectives of power elites”. This argument is reinforced by Vermeullen and Cortula, (2010) who also observed that while contract farming has “no direct implications for the distribution of land rights, changes in land access however could occur as local elites may be better able to seize the opportunities created by the greater intensification and commercialisation of agriculture”.

On the other hand, the counter argument presented is that contract farming schemes are a means of linking smallholder farmers to local and export markets and a viable mechanism which eliminates some of the constraints and market failures that smallholder farmers face such as access to quality inputs, credit, extension and market information (see for example Glover and Kusterer, 1990; Paglietti and Sabrie, 2013;).Based on the contract farming case studies that they reviewed in Madagascar, Endeva and HERi Madagascar (2015) identified mutual benefits for buying companies and smallholder farmers involved in contract farming.

Table 7: Stages of contract farming development

Stage	Main Stage Characteristics	Time Frame
Stage 1: Formation stage	<ul style="list-style-type: none"> Both parties seeking immediate monetary benefits Contracts usually informal and largely one sided to the benefit of the buying company. The contracts are drawn up without sufficient consultation of all the stakeholders involved. Lack of transparency in the procurement process. High levels of side selling by the contracted growers. 	2 – 3 years or 4 - 6 production and procurement cycles.
Stage 2: Consolidation stage	<ul style="list-style-type: none"> The buying company and the contracted smallholder farmers are both convinced of the benefits of the system and they develop genuine interest to develop the system to be more robust and long term. Producer Association is formed and begins to get active. Price determination and testing of quality becomes more transparent and fair with a degree of involvement of Producer Associations. Formal contract is drawn and the terms are discussed with the Producer Association. Both parties show more willingness to resolve disputes through mutual discussion. Support systems like input supply, credit, insurance are put in place. 	3 -5 years
Stage 3: Responsible Business Stage	<ul style="list-style-type: none"> Producer Association is empowered and able to negotiate the terms of the agreement with the buying company. Systems and processes become much more transparent and fair with the active involvement of the Producer Association. Both the buying company and the contracted growers are willing to consider environmental / social issues for more sustained / long term association. Buying company works with the producers on soil and water conservation in the project area. 	5 – 10 years
Stage 4: Sharing of Risk and Return – The true Partnership Stage	<ul style="list-style-type: none"> There is complete trust and transparency between the producers and the buying company. Buying company ready to share profits with the producers Companies also compensate for the gradual erosion of producers assets such as soil and water. 	This is the ideal stage and it often takes decades to reach

Adapted from Ganguly (2013)

The companies benefit from working with smallholder farmers through guaranteed quantity and quality of supply which are normally determined in the contract, the companies are also able to monitor compliance with production methods and since prices are agreed beforehand in the contract, the companies secure stable prices. Working with smallholder farmers also allowed the companies involved to scale up production without having to go through the lengthy process of acquiring land thus giving them greater flexibility to adjust production to demand (Endeva and HERi Madagascar, 2015). The smallholder farmers reported perceived benefits to be access to guaranteed markets with predetermined produce volumes and set prices. Often the prices secured by the farmers were higher than on the market as middlemen have been cut out. The smallholder farmers also benefited from inputs received from the contracting companies thus limiting the need for capital and reducing their risks though these inputs are paid for when produce is delivered to the agri-business. The smallholder farmers also received training from the companies, often not only on Good Agricultural Practices (GAPs) but also on business skills (ibid.). The cases studied however also revealed specific challenges that need to be addressed such as farmer organisation, financing inputs and paying farmers in a timely way as discussed below:

Farmer Organisation: The fact that smallholder farmers are scattered is a major challenge for companies engaged in contract farming activities with smallholder farmers. Indeed, the transaction costs related to sourcing required produce from a multitude of individual farmers scattered in different locations is very high. For example, the increased transaction costs emanate from the higher costs of transport, human resources and time required to coordinate production activities with smallholder farmers in multiple locations. As such the contracting companies need to find ways to organise individual smallholder farmers into more manageable groups (e.g. cooperatives). Endeva and HERi Madagascar (2015) noted that several buying companies in Madagascar collaborated with Non-Governmental Organisations to organize farmers. As a result the contracting companies were able to reduce the transaction costs related to organizing the farmers through cost sharing arrangements that were agreed with partner Non-Governmental Organisations who had an interest to promote smallholder farmers linkages with commercial markets. In one of the case study reviewed by Endeva

and HERi Madagascar (2015) the International Fund for Agricultural Development (IFAD) provided support to HavaMad, a company established in 2013 to process fruit juice. The initiative successfully organised farmers to supply required organic raw materials through a contract farming arrangement involving farmer cooperatives in the central highlands of Madagascar.

Private sector companies' collaboration with a network of lead farmers is also gaining momentum as a strategy to reduce the transaction costs related to sourcing produce from smallholder farmers. As Endeva and HERi Madagascar (2015) noted in one of their case studies, rather than having to deal with multiple individual smallholder farmers, Socolait, a dairy processing company established its contracts with lead farmers who in turn collected milk from other smallholder farmers (close to their farms) on behalf of the company in return for a margin. The Lead Farmers therefore acted as produce aggregators allowing Socolait to collect large volumes of milk at designated points rather than having to collect small volumes of produce from multiple farmers.

Pre-financing Inputs: Smallholder farmers are cash constrained and risk averse (Endeva and HERi Madagascar, 2015). Companies seeking to engage smallholder farmers to use specific techniques and to use determined inputs in most cases need to pre-finance the inputs to facilitate introduction of new activities and practices by the small holder farmers. Endeva and HERi Madagascar (2015) for instance noted in their case studies in Madagascar that three companies were providing inputs to smallholder farmers. Phileol, an agricultural company which exports castor oil to France provided castor beans seeds for free to the three thousand small holder farmers that it contracted. Similarly SOCOTA (a company well known for its activities in the textiles industry) provided black eyed pea seed to the nine hundred and fifty smallholder farmers that it partnered with under its contract farming model. FIFAMANOR, a company that was established in 1972 and works with smallholder farmers to carry out wheat seed production also pre-financed all inputs required by the contracted growers for the production of crop seeds. Although both FIFAMANOR and SOCOTA sought to recuperate their expenses by subtracting the input costs from the payments to producers for their

supply, often with an interest rate agreed upon in advance, Endeva and HERi Madagascar (2015) noted that this was difficult due to the high rates of side-selling as the contracted smallholder farmers tended to sell their produce to any buyer who offered the best price without consideration to the contractual agreement they would have made with the companies that provided them with production input package. As such, this positioned the contracting companies at a disadvantage to competitors who often reaped the benefits of their investment.

Paying Farmers: Endeva and HERi Madagascar (2015) also noted that companies sampled in their study experienced challenges in paying out the large numbers of contracted smallholder farmers. Moving around with large amounts of cash attracts thieves which puts the company staff and resources at risk. Apart from the fact that direct cash payments to thousands of contracted smallholder farmers is neither cost nor time effective, it also cultivates fertile ground for potential fraud. Endeva and HERi Madagascar (2015) further explain that some of the sampled companies (HavaMad, QualityMad and SCRIMAD) resorted to using mobile money services to pay the contracted smallholder farmers. While this provided a viable payment method, Endeva and HERi Madagascar (2015) noted that the use of the mobile money facility however also required some coordination to ensure that local agents had sufficient cash to pay out to the contracted farmers.

In conclusion, the discussion on contract farming above presents several challenges that are faced by smallholder farmers during production and marketing of their produce which need to be considered as background to the contract farming model. Smallholder farmers produce limited quantities of low quality supply and in the majority of cases, they often lack investment capital and have limited market access for their produce. This normally results in farm gate sales to informal buyers through one time spot transactions which reduce scope for repeat sales. Due to the limited output volumes that smallholder farmers have, output buyers often see little value in engaging these low volume, low quality supply sources. Contract farming seeks to address the above constraints through arrangements which involve a buyer contracting smallholder farmers to directly source agricultural supply. This model enables output buyers to better control smallholder farmer production and product quality with the intention that this leads to a more

predictable and repeatable economic relationship. The buyer organises the supply chain from the top including the collection and processing services in addition to providing the smallholder farmers with critical inputs, specifications, training and credit. The smallholder farmers on the other hand provide assured volumes of crops of specified quality, on specified dates at agreed upon prices. While the successes of contract farming initiatives have varied from case to case, evidence from literature confirms that contract farming can be used to reduce the transaction costs and uncertainty that would exist if crops were sold/purchased on the spot market, to provide some control over the production process and also as a tool to manage a value chain (or segments of it). Indeed as Minot (2007) explains, contract farming can be successful for products that (a) require vertical integration and as such coordination of the activities of the producers and sellers (b) allow for economies of scale in the processing and distribution chain and (c) need higher levels of organisation / integration where spot markets cannot satisfy the quality / quantity of the demand. Several critical questions should be considered when designing contract farming interventions. These questions include the following:

- ✓ How will the contract ensure that smallholder farmers do not side sell in local spot markets when prices rise?
- ✓ How will the buyer respond if the contracted smallholder farmer does not fulfil agreed contractual obligations? How can companies mitigate against fixed-price contract arrangements and oscillating market prices?
- ✓ In the event of opportunistic behaviour by smallholder farmers which leads to side selling of contracted produce, how is the loss handled by the buyer? Are there penalties that the buyer will enforce against the contracted grower and how practical and enforceable are these penalties?
- ✓ Is the crop “switching time”⁴ short enough for the farmer to buy into the relationship? Does the buyer need to finance the “switching costs”?
- ✓ How should the farmers be organised to ensure establishment of an effective aggregation mechanisms
- ✓ Which crops are suitable based on markets, level of input and technical expertise required, side selling risk, buyer specifications and price differentials with spot markets?

⁴ This relates to the time a smallholder farmer takes to begin earning returns from the production activities related to the contract farming relationship with the sourcing company.

Indeed, as GIZ (2013) points out in their *Contract Farming Handbook*, several enabling conditions are required for contract farming initiatives to be successful. These conditions include trust and appropriate platforms for negotiation of fair terms, economic viability of the proposed contract farming interventions which allow for incentives for the buyers and participating smallholder farmers. As such, contract farming initiatives should be informed by sound analysis, planning as well as monitoring framework that allows for corrective actions to be implemented timely. In addition, the success of contract farming initiatives also requires technology transfer, extension and innovation (ibid) as well as a stable and transparent land tenure regime.

2.2.2 Leases and Management Contracts

Leases and management contracts involve arrangements whereby a farmer or farm management company carry out their production activities on land belonging to someone else. Leasing farmland involves a business agreement (farm lease) between the farm owner and an operator which describes the terms and conditions of the agreement and provides the basis for combining the landlord's and the tenant resources of land, labour, capital and management to efficiently produce farm commodities (Iowa State University, 2014). Leasing therefore allows landowners to secure a return on their investment as well as maintain the productivity of their land. Leasing of farms has gained dominance in various parts of the world for instance in Iowa where more than half of the farmland is rented to tenant operators (Iowa State University, 2014). Indeed, land is an expensive resource and often a large capital investment is required to purchase land large enough to undertake profitable agricultural activities. Leasing land therefore provides an alternative cheaper method which allows an interested agribusiness actor to undertake production activities on someone's land.

Vermeullen and Cortula (2010) indicate that management contracts are commonly used by holders of large estates to contract an agribusiness company to manage their plantation. Although the estate holders could be individuals, companies or state bodies, the focus of this study reviews use of lease and management contracts in cases where land is held by smallholder farmers and local communities. As such, a management

contract allows an agribusiness company full control over farming operations implemented over land which is owned by smallholder farmers or local communities.

Leases: The most common types of leases are dependent on the desired share of risks and returns between the landholder and the farm operator. These models are:

Fixed Cash Lease: Under this model, the tenant pays a given amount of cash rent per acre (or hectare) per year for the use of the allocated land. The landlord may impose restrictions on the types of crops that can be grown, tillage, conservation and pest control practices that can be used. Besides these restrictions, the tenant enjoys free rein in planning the crop and livestock production program on the farm unit and is entitled to all the crop produce harvested from the farm.

Flexible Cash Lease: This is a variation of the fixed cash lease in which the actual land rental amount paid by the tenant is depended on the yields attained and the selling prices available on the market during the lease period. This ensures that the rent paid is in line with the profitability of the crops grown during the lease period. Under this model, smallholder farmers (the landowners) share some of the risk of low yields or declining commodity prices with the tenant. In the same vein, the smallholder farmers leasing their land also share in the extra profits when prices and / or production exceed expectations. Iowa State University (2014) also explain that some flexible leases also take into account crop input costs when determining the final rent or bonus. As such, under this arrangement, an agribusiness partner would pay the smallholder farmers concerned an amount which is calculated on the basis of a predetermined and agreed formula.

Crop Share Lease: This arrangement involves sharing of the output produced on the farm (again on the basis of a predetermined and agreed formula). Each party assumes responsibility for the storage and marketing of its output share.

These three types of leases present merits and demerits to each party, the smallholder farmers (land owners) and the interested agribusiness partner seeking to conduct production activities on the rented land. As Vermeullen and Cortula (2010) explain, lease (and management) agreements are often easy to implement and can provide lucrative

economic returns to the parties involved. By allowing an agribusiness partner to work on their land, smallholder farmers gain access to new economic opportunities in which the agribusiness company (tenant) has experience and required technological expertise (e.g. solar energy generation farms), expertise that the community otherwise lacked and would not have had the required financial capital to set up required investments.

On the other hand, some lease agreements can tie land owners (in this case smallholder farmers) to long term contracts that offer minimum opportunities for renegotiation with agreed fees not reflecting market prices. Given this possible risk related to land owners tying themselves to unfavourable deals, short term contracts which allow for review and renegotiation by the parties are recommended. Furthermore, lease (and management) agreements also often render small scale farmers passive recipients of cash pay-outs of agreed fees (either in cash or in kind) rather than assuming their place as active participants in the management of the business. Indeed, as Vermeullen and Cortula (2010) explain, long term leases pose the risk of alienating small scale farmers from control over their land for generations. In cases where an agribusiness company leases large tracts of land which were previously used by large numbers of community members, the resultant unemployment can be high and could imply adverse effects on the community well-being, particularly in cases where an agribusiness company then employs high levels of farm mechanisation thus reducing the demand for labour from communities. As an example, a lease contract entered into in 2008 between Mondi Limited (a South African Timber Company) and the Siyathokoza Community Trust (SCT) enabled the company to conduct commercial forestry operations on the community's land through a deal which was concluded as part of a land restitution settlement involving the investor (Mondi Limited), the community trust and the South African Government. In exchange to the use of their land, the community trust receives land rental fees which are reviewed periodically (ibid).

A summary of the main advantages and disadvantages which should be considered by the parties before choosing the type of lease and the terms that should be incorporated in it is provided (Table 8).

Table 8: Advantages and Disadvantages of different leasing models

Type of Lease	Advantages	Disadvantages
Fixed Cash Lease	<ul style="list-style-type: none"> • Simple lease. Presents relatively few chances for misunderstanding by the parties. • Land owners have little financial risk. Tenant has maximum freedom to plan and develop cropping and livestock production programs • Land owners relieved from day to day operational decision making. 	<ul style="list-style-type: none"> • Need to review and frequent periodic renegotiation of the rental fees. • Rental fees not pegged to correspond with farm productivity and market conditions. • Tenant assumes all the production and marketing risk.
Flexible Cash Lease	<ul style="list-style-type: none"> • Rental fees pegged to farm productivity and market conditions (input costs, selling price etc). • Reduced need to frequently renegotiate the rental rate 	<ul style="list-style-type: none"> • Parties should agree on a formula for setting cash rent. This formula is often complex and difficult particularly for smallholder farmers to fully understand. • There is uncertainty regarding the rental fees that the tenant will pay as the amount varies each year depending for example on farm performance and market prices for output produce.
Crop Share Lease	<ul style="list-style-type: none"> • Risks associated with yield and prices are shared • Land owners more involved in decision making particularly regarding marketing of output produce. • Both parties benefit from the use of yield enhancing technologies or unexpected high yields / market prices 	<ul style="list-style-type: none"> • If output produce is stored in the same storage facility, often marketing decisions have to be done jointly. • There may be need to negotiate cost sharing arrangements for produce storage, drying facilities as well as the cost of inputs used during production

Source: Adapted from Iowa State University, 2014

Management Contracts ~ contracts that specify a crop / profit share are generally deemed to provide greater incentives for the small scale farmers rather than payments calculated on the basis of an agreed a flat rate lease (Vermeullen and Cortula, 2010) or those linked to future spot market prices.

Farm management contracts have gained popularity in countries where production potential and land acquisition processes are high; for example Brazil, Australia and Canada. In South Africa, ownership and management of farms is also increasingly getting separated. Vermeullen and Cortula (2010) note that management contracts are also increasingly becoming popular in the United States where forty percent of the farms are managed this way particularly in Mississippi and Missouri. In Papua New Guinea smallholder farming communities own ninety seven percent (97%) of the available land (Vermeullen and Cortula, 2010) and the production and marketing of palm oil is one of the main commercial activities. Land owning clans entered into a management agreement with New Britain Palm Oil Limited, the country's largest palm oil plantation manager and miller enabling the establishment of a palm oil plantation over 40,000 hectares on community land. This example differs from a simple lease contract in that community members gain benefits from land rental, a fee per unit of harvest, employment and shares in NBPO Ltd.

In conclusion, the regulatory framework that guides the terms of leases / management contracts is provided in most cases by the country's government. Third parties are usually not directly involved in the formulation of lease / management agreements as in most cases the tenant agribusiness partner provides (or sources) the necessary services to facilitate the development of the business deal with small holder farmers concerned. Non-Governmental Organisations (NGOs) however often provide business, negotiation and livelihood support to local communities that will be involved in the deal formulation (Vermeullen and Cortula, 2010).

Smallholder farmers can be positioned to be better connected to markets and to secure incomes through arrangements which involve leasing of their land and management contracts. Leasing of land provides an alternative to buying land for agribusiness investors seeking to expand their agricultural production. Before entering into an agreement, it is important for smallholder farmers to carefully consider the level of risk and operational involvement that they are willing to accept as well as the merits and demerits of each of the types of farm leasing as explained in the discussion above. Leasing land has historically come with significant risks for both the lessee (agribusiness tenant) and the lessor (the smallholder landowners). As Hudson and Krause (2014) explain, land which has been leased for extended periods and to a variety of lessees, can become run down, with poor soil fertility, weeds and poorly maintained infrastructure due to lack of incentive by the lessee to invest on someone's land. Despite these risks, farm leases and management contracts can offer positive experience and benefits to smallholder farmers if appropriate measures are taken to ensure their voice in decision making and fair sharing of the economic benefit.

2.2.3 Tenant Farming and Share cropping

Tenant farming and share cropping is a mirror version of management contracts discussed above. While management contracts relate to mechanisms for agribusiness companies to run farms on land held by smallholder farmers, tenant farming and sharecropping relates to arrangements for smallholder farmers to farm on land held by larger scale agribusiness (or government nuclear estates). Under tenant farming – the agribusiness company normally charges the smallholder farmer a fixed rental fee for use of the land. Under sharecropping – the land owner (agribusiness company) and the share cropper (smallholder farmer) split the crop produce calculated on the basis of a pre-agreed percentage.

Table 9: Advantages and Disadvantages of Tenant Farming and Sharecropping

Model	Advantages	Disadvantages
Tenant Farming	<ul style="list-style-type: none">• Enables smallholder farmers to overcome land access constraints.• Provides smallholder tenants to incentive to invest in better inputs to secure larger harvests	<ul style="list-style-type: none">• Tenancy arrangements can be exploitative more so given the fact that smallholder farmers will have weaker negotiating power.• Tenant farmers finance own inputs which is a challenge for smallholder farmers who are usually resource constrained.
Sharecropping	<ul style="list-style-type: none">• Enables risk sharing of harvest failure and / or price fluctuations.• Enables smallholder farmers to overcome land access constraints• Often enables smallholder farmers to secure production inputs	<ul style="list-style-type: none">• Arrangements can be exploitative• Sharecropper's decision making about production is limited and• Sharecropper has weaker negotiating power.

Adapted from Vermullen and Cortula (2010)

Sharecropping has been widely criticised by economists for being less efficient than cash rental contracts and social justice campaigners have also argued that the system is exploitative. In many developing countries however, sharecropping is seen as a valuable alternative to fixed rate rentals as it enables farmers to share production risks with their landlords. Sharecropping has historically allowed the landless to access production land in many parts of the developing world particularly in West Africa. Vermeullen and Cortula (2010) however argue that “as land becomes scarcer, the terms and conditions of sharecropping” are being transformed in the developing countries. In Ghana for instance, while share contracts were previously a means by which the land poor but labour rich households could gain access to a production plot, those seeking to sharecrop are now required to put forward a significant fee in order to gain access (Amanor, 2001). As such,

the poor are increasingly finding their position more difficult in relation to accessing production land through sharecropping arrangements – a trend which is expected to continue growing as demand for land becomes stronger and land values rise.

2.2.4 Joint Ventures

Joint ventures are versatile arrangements which involve two or more parties running a business initiative. Paglietti and Sabrie (2013) define a joint venture as “a business agreement in which two independent market actors (for example an agribusiness company and a farmers organisation) agree to develop a new business by contributing equity and therefore sharing assets, ownership, revenues and expenditure”. Indeed, under the joint venture model, each party contributes towards the business either in cash (capital) or in kind (for example land, technology, knows how etc). The parties in the joint venture share any profits (or losses) that are made by the business. As Vermeullen and Cortula (2010) correctly explain, there are two key features in joint ventures:

- a. The partners share ownership of the venture, not just benefit sharing;
- b. The partners do not merge into a single entity but retain their individual legal status

The particular features of joint venture arrangements are therefore the sharing of financial risks and the benefits and in most, but not all cases, the sharing of decision making and equity (Paglietti and Sabrie, 2013). Joint ventures can be formalised through different methods. In one instance, they may involve the setting up of a jointly owned, unincorporated company which is co-owned by the joint venture parties according to an agreed memorandum. On the other hand, an incorporation route can be followed which involves the creation of a body with a separate legal entity, which enables the joint venture parties to limit their liability. The later also enables the joint venture company to acquire assets and to enter into contractual relationships with other business parties. Many joint ventures however are not incorporated and therefore they are run without a separate joint venture company that has a distinct legal personality.

Unlike leases and management agreements discussed above, joint ventures position smallholder farmers to secure their share from realised profits (rather than one off payments related to land rentals or farm gate crop prices). Indeed, as Paglietti and Sabrie (2013) explain, one of the main advantages for smallholder farmers under joint ventures

is the sharing of benefits and their empowerment to make decisions as joint ventures enable smallholder farmers to have a legally recognised decision making role in the business (Vermeullen and Cortula, 2010). Joint ventures between agribusiness companies and smallholder farmers are increasingly gaining popularity and are well established globally. The joint venture model has continued to gain momentum in recent decades due to several factors including legislation and policies increasingly being enacted by some governments in the developing countries that requires business to provide economic opportunities for indigenous entrepreneurs including smallholder farmers. In Zimbabwe for instance, the government has enacted an indigenisation law which compels all international business investors to partner with local entrepreneurs / investors as a strategy to promote inclusion of local communities in economic activities (Government of Zimbabwe, 2007). In Mozambique, IKURU is an agribusiness company which has successfully managed to set up a thriving seed and commodity trading business operating from Nampula. The company exports assorted agricultural produce (mainly sesame) to various European markets including Norway and Turkey. The company is a joint venture between smallholder farmers in Northern Mozambique⁵, a Mozambican financial institution GAPI⁶ and some Norwegian investors (GAPI, 2015). Vermeullen and Cortula, (2010) provide another example, Divine Chocolate Company, a joint venture between the Kuapa Kokoo Farmers Union⁷ which has forty five percent shares (45%), Twin Trading, a UK Fair Trade body and Oikocredit, a microfinance institution. Divine Chocolate has expanded rapidly over the past years. Apart from financial capital contributions, smallholder farmers can also pool together their land as their main contribution in the joint venture. The smallholder farmers participating on this initiative directly benefit from 50% of the fair-trade premium with the remaining 50% being pooled for community projects for instance construction of schools and health centres. In such cases, this requires some formal legal recognition that certifies that the land is owned by the community / smallholder farmers in question. Several countries such as Canada, Mexico, South Africa, Papua New Guinea, Malaysia and Sweden have documented experience with land based joint ventures.

⁵ Approximately 20,000 smallholder farmers in Northern Mozambique have shares in IKURU

⁶ See <http://gapi.co.mz/>

⁷ A union of cocoa farmers in Ghana

In South Africa for instance, the country's government has encouraged joint ventures between local farmers and agribusiness companies under two specific scenarios:

- a. Schemes in which holders of equity shares in the joint venture are existing employees and
- b. Schemes in which the joint venture is established between an agribusiness company and beneficiaries of the land redistribution programme.

Both are intended to maximise the economic benefits to land reform beneficiaries by linking them to well established, professionally managed agribusiness companies. Between 1994 and 2002, a total of fifty joint ventures had been established with some financial support from the South African government (Mayson, 2003). Twenty of out the fifty joint ventures were established in the Western Cape Province, the area that offers the greatest potential for horticultural production. Greenburg (2009) also notes that an additional thirty eight joint ventures were established between 2002 and 2009.

Through such joint ventures, the South African Government sought to ensure that previously disadvantaged communities were integrated in highly competitive commercial agriculture through partnership in business activities with established agribusiness companies. The South African Government, through its Department for Rural Development and Land Reform provided policy direction in the formulation of the deals. As Vermeullen and Cortula (2010) explain, the standard model was for the government to pay for land (to the displaced white commercial farmer). The land would then be held by a community trust with stated beneficiaries. Management of the farm was contracted to an operating company. Forty nine percent of the shares in the business would then be owned by the agribusiness company (which could also be the former white commercial farmer) while fifty one percent of the shares were allocated to the smallholder farmers trust. The joint venture agreement between the parties stipulated the terms for farm management and sharing of costs and benefits. The model was designed to facilitate the gradual transfer of technical and financial skills to the smallholder farmers who held the majority shares. Greenburg (2009) and Lahiff (2007) both demonstrate how this joint venture model provided material incentive for effective farm management by the parties involved. As Davis and Lahiff (2011) explain, the move towards private sector involvement in South Africa's land reform joint ventures reflects

current dominant development thinking not only in Southern Africa but globally whose central tenet is that market oriented strategies and private sector involvement is required as a basis for sustainable economic development. Indeed, as explained in the discussion above on inclusive business, private sector involvement in development projects is increasingly seen as a way of meeting social justice requirements as well as maintaining productivity and profitability.

These joint ventures have however been criticised regarding the extent to which smallholder farmers realistically secure decent livelihood income from such schemes (see for example, Davis and Lahiff, 2011). As an example, of the eighty eight shared equity agricultural schemes that were established in South Africa between 1996 and 2008, Greenburg (2009) noted that only nine had declared their dividends. Levubu citrus estate which is reviewed by Greenburg (2009) as one of the case study revealed that the main source of smallholder farmer's income was not dividends or land rental fees but instead employment wages that were an average the equivalent of US\$185 per month. As Vermeullen and Cortula (2010) explain, the general opinion derived from this case study is that the management company secured ways to conceal profits in its accounting systems as a strategy to avoid huge payouts to the smallholder farmers. The management company effectively went into liquidation in 2009 and in addition to the loss of dividends; the land beneficiaries did not have a strong enough voice to influence the business outcomes. Vermeullen and Cortula (2010) acknowledge that accounting in joint ventures is complex and it "can be easy for the agribusiness to engage in practices that artificially depress profits for the joint venture to the benefit of other subsidiaries controlled by the agribusiness company for instance through sale of products at below market prices" (see also Greenburg, 2009). In this instance, smallholder farmers consequently receive small amounts in the form of dividends. It is in this respect that McIndoe-Calder (2012) argues that smallholder farmers participating in a joint venture are not particularly insulated from exploitation by the agribusiness company.

The challenges related to the South African land reform joint ventures are further captured by Davis and Lahiff (2011) who conclude that "these partnerships were an ambitious and experimental effort to include communities in all aspects of the agricultural enterprises". Davis and Lahiff (2011) identify several challenges which

limited the success and profitable inclusion of local communities in these joint ventures such as the vast difference (in knowledge and experience) between communities and their commercial partners; lack of agreement on the roles and responsibilities between the parties (especially around the provision of working capital) and failure on the part of the regulatory authorities to monitor and regulate the contractual agreements between the parties. In other cases however, literature shows that joint ventures are often fairly successful. For example Majid – Cooke (2002) and Vermeullen and Cortula (2010) explain how the Malaysian government introduced the Konsep Baru scheme in the 1990s – a strategy which promoted the formation of a tripartite joint venture between smallholder communities, an agribusiness company and the government (represented by a parastatal). Under this model, the agribusiness company held sixty percent (60%) of the shares. The company established palm oil plantations on land that belonged to participating smallholder communities who held thirty percent (30%) shares in the joint venture. The government, acting through a parastatal agency held the ten percent (10%) balance shares for its role as the trustee with power of attorney. This joint venture and land lease agreed for a sixty year period facilitated the planting of oil palms on 12,600 hectares between 1996 and 2009. In 2005, the harvest was 160,000 tonnes of fruit bunches and although dividend figures are not available for all the years, in 2009, the 1,701 smallholder farmers who were in this joint venture received a total of three hundred dollars each. Other improvements are also reported to have been noted particularly employment generation for seventy six local contractors as well as water and power supply to the community (Stephen, 2006; Banji, 2009, Bernama, 2009). De Koning and de Steenhuijsen Piters (2009) argue that although the dividends paid to smallholder farmers are often small, due to the large number of smallholders involved, the dividend payouts that the smallholder farmers receive have an important symbolic value. Joint ventures also help with branding and reputation.

In conclusion, joint ventures have demonstrated that although they often enable smallholder farmers to engage with other agribusiness actors as equal partners and empowers them with a voice guided by clear legal frameworks and mechanisms for dispute resolution and redress, there is need for caution as these arrangements often involve “partnerships between players with different negotiating power, resources, information and skills” (Cortula, 2010).

Joint ventures enable smallholder farmers to have representation on the board, thus empowering them with the voice they require to have a say in the business decisions and to have access to valuable corporate information, but, in cases where the joint venture is successful, often new financing is required to expand the activities and in such instances, new shareholders are often required to come on board to inject new project financing or the existing shareholders are compelled to contribute more to resource the expansion. In cases where smallholder farmers are not able pay for additional capital requirements, their equity shares may decrease effectively reducing their voice on the board (Vermeullen and Cortula, 2010). Furthermore, although joint ventures can potentially be lucrative ways for smallholder farmers to achieve commercial success, the arrangements can be complex and successful implementation can be challenging. These challenges need to be taken into consideration in interventions that pursue this model as a strategy to strengthen smallholder farmer's inclusion in contemporary agribusiness value chains.

2.2.5 Upstream – downstream models

Upstream and Downstream business links involve arrangements which enable smallholder farmers to engage with other value chain actors that reach beyond agricultural production. Upstream links include supply of inputs and other business development services such as finance, extension and insurance. Downstream links on the other hand involve smallholder farmer's linkages to wholesale and retail markets. Certification (e.g. Fair Trade, Europe GAP) is a key component required to facilitate downstream business linkages, especially if supply chains are international. Development organisations have often been crucial in establishing certification schemes including stimulating demand for certified products in markets for processed agricultural output and for covering the costs during early stages of development of these schemes. As McIndoe - Calder (2010) argues government policies can play a critical role in facilitating downstream and upstream business linkages for instance in cases where policies encourage domestic agency service provision, through promotion of local business or specific tax incentives designed to enhance the value-chain and the expansion of economic opportunities associated with local agricultural production. In other words, Governments can create the enabling environment for smallholder and agri-business relationships to develop.

2.2.6 Farmer Owned Businesses

In order to strengthen their participation in agribusiness value chains smallholder farmers often formalise their alliance and / or legally incorporate into a company. The businesses are often cooperatively owned and the arrangements can take various forms including:

- ✓ Farmer Associations – These are organisations for grouping and representation of farmer's interests. Farmers Associations are not always focussed to profit driven activities.
- ✓ Trusts – these are legal devices that hold and protect assets for named beneficiaries.
- ✓ Enterprises such as cooperatives, community enterprises and farmer owned companies – this incorporates a diverse range of corporate bodies used by smallholder farmers to trade with other agribusiness actors.

Cooperatives and farmer owned companies are widespread globally and are established for a plethora of reasons. The International Cooperative Alliance (ICA) (2015) defines a cooperative as “an autonomous association of persons united voluntarily to meet their common economic, social and cultural needs and aspirations through a jointly owned and democratically controlled enterprise”. As such, cooperatives are intended to be organisations or enterprises which are highly democratic and self-governing and which rely on self-help and own responsibility to meet economic, social and environmental goals in addition to promoting the social integration of members in community activities (United Nations, 2009; Nkhoma, 2011). ICA has identified seven principles by which cooperatives are expected to put their values into practice (ICA 2015; Table 10). Building on these seven principles, each country usually develops its own legislation to guide the activities of cooperatives; therefore, Government policy plays a fundamental role to define the framework under which cooperatives and farmer organisations operate in each country. Many countries have simplified regulations and procedures for cooperatives to register and operate and they also enjoy other privileges such as lower taxes or licence fees or special export credit guarantee schemes (Boyd, 2005; Vermeullen and Cortula; 2010). However in return for these benefits, cooperative management has to be democratic and engage all members which can lead to slow decision making, especially in relation to rapidly changing markets.

Table 10: Main Cooperative Principles

Principle	Comments
Principle 1: Voluntary and Open Membership	As a voluntary organisation, a cooperative is open to all persons able to use the service and willing to accept the responsibilities set for the membership without gender, social, racial, political or religious discrimination.
Principle 2: Democratic Member Control	The members actively participate in setting the cooperative policies and other decision making processes. Men and women serving as elected representatives are accountable to the membership. Members have equal voting rights (one member, one vote).
Principle 3: Member economic participation	Members contribute equally to, and democratically control the capital of their cooperative. Defined financial contributions are prescribed as a condition of membership. The generated funds are used to cover the expenses related to the running of the cooperative.
Principle 4: Autonomy and Independence	Ideally, cooperatives seek to operate as autonomous self-help organisations whose activities are controlled by their members. Engagements with other stakeholders ideally should be conducted on terms that ensure and protect the democratic control by their members and cooperative autonomy.
Principle 5: Education. Training and Information	Cooperatives mainly focus on providing education and training to their members on various development themes. Emphasis is placed to ensure membership understanding of the benefits of cooperation.
Principle 6: Cooperation among cooperatives	Cooperatives strive to serve their membership more efficiently by cooperating with other structures at local, regional and international levels.
Principle 7: Concern for the community	A key focus of the cooperative objectives is to promote the sustainable development of their communities through policies approved by their membership.

Adapted from ICA, 2015

In most countries, particularly in Sub Saharan Africa, the government often have considerable influence on farmer cooperatives such that they may be able “merge and separate cooperatives, instruct on investments or rule on internal disputes” (Vermeullen and Cortula; 2010); this effectively creates the environment for government owned, or at least heavily influenced, farmer organisations.

Several studies have documented multiple factors which justify the formation of cooperatives (See for example, Coulter et al, 1999; Chambo, 2009; Mtonga, 2012 and Barraud – Didier et al, 2012). In agriculture, farmer cooperatives are primarily intended to benefit their members in cases of imperfect market situations (Nkhoma, 2011) and the risk of market failures. Harris and Carman (1983) defined market failure as “possible instances in which the ideal conditions for market success do not hold”. They further explain that situations of market failure include:

Imperfect competition: This mainly arises due to fewer buyers or sellers of a specific product leading to uncompetitive conduct and opportunistic behaviour such as collusion and predation.

Imperfect information: This arises from lack of information and asymmetric information which, as Centner (1988) explains, manifests in the form of the “lemons problem” and “moral hazards”. The lemons problem depicts scenarios for instance when a buyer is not able to differentiate the quality of sourced products which results in sellers having no incentive to provide quality products. This largely arises from situations when produce traceability systems are weak and not fully developed. Moral hazard on the other hand relates to scenarios whereby the costs for failure to meet set standards are not met by the offending seller but rather borne by another.

Restricted Bargaining: This relates to scenarios for instance when buyers take advantage of the production period in agriculture and “hold up” producers by offering lower prices or threatening to cease buying as a strategy to coerce the farmers to lower their produce prices (Centner, 1988). In this case, Nkhoma (2011) argues that

cooperatives may provide an alternative market for the farmers as well as enforce some balance of market power.

In addition to the above stated conditions, market failure in most developing countries also arises from poor infrastructure and geographical isolation due to bad roads or communication systems which result in high transaction costs (Tollens, 2006; Nkhoma, 2011). Given these market imperfections which often confront smallholder farmers, cooperatives are considered to enhance the bargaining strength of smallholder farmers with input suppliers and buyers of farm products (as well as other interconnected services such as extension, mechanisation and finance). Dorward and Kachule (2005) for example identified the main reasons for smallholder farmers joining farmer's organisations as access to credit inputs, product markets and extension. Nkhoma (2011) argues that cooperatives promote smallholder farmers participation in supply chains by encouraging group action by producers. These conclusions presented by the various scholars all point to the fact that cooperatives play an important role in the development of agriculture in many countries. Indeed, as Ruete (2014) explains, although cooperatives are not without their own challenges, they however provide a valuable potential avenue for investors and small scale farmers to enter into collaborative partnerships and to ensure an equitable distribution of returns. This is backed up by some compelling statistics (Box 1)

Box 1: Importance of Agricultural Cooperatives

- ✓ Four million farmers in Egypt earn their income through cooperative membership.
- ✓ Nine hundred thousand farmers in Ethiopia earn their income through cooperative membership.
- ✓ Sixteen Million Five hundred litres of milk are collected everyday from Twelve Million farmers organised in dairy cooperatives in India.

Source: Food and Agriculture Organisation (2013); Marina Ruete (2014)

Arcas-Lario et al (2014) indicate that the General Confederation of Agricultural Cooperatives in the European Union has around 40,000 cooperative companies in the European Union with about 600,000 workers and an aggregate turnover of more than

300,000 Million Euros. Spain stands out in the European Union with almost 3,918 cooperatives which employ 93,000 workers and have a turnover of more than 17,000 million Euros. These figures clearly indicate the importance of cooperatives in various countries in the world.

A key characteristic of cooperatives is that they are a user-owned and user-controlled type of business that distributes benefits equitably on the basis of use or patronage (ICA, 2015). In contrast to investor owned firms (IOFs) which are operated in line with investor interests, “cooperatives are member owned, member controlled and operated for the benefit of producer members” (Arcas-Lario et al ; 2014). The principle of democratic governance is one of the most important characteristics of cooperatives⁸. This principle entails that each member has the same voting right during the Annual General Assembly to influence decisions that are made by the cooperative. The democratic nature of the cooperative also implies that elected officials who form the leadership of the cooperative are accountable to the membership. Kwapong and Korugyendo (2010) argue that due to the cooperative high democratic and autonomous values, they have potential to play a strong role in reducing poverty, social exclusion and promoting rural and national development in Sub Saharan Africa. It is also in this respect that many authors (e.g. Lerman and Parliament 1991; Pratt 1998; Hind 1998) argue that the evaluation of the performance of cooperatives should be broadened to review not only the financial performance of the business but priority should also be placed to examine members satisfaction with the services provided by the cooperatives.

2.3 Evolution of African Farmer Cooperatives

The following discussion informs the heart of this thesis as it reviews literature on farmer’s cooperatives in sub Saharan Africa. The main case study that was used for this research, as previously explained, is a Produce Marketing Organisation that was managed by the Livingstone Farmers’ Cooperative. This literature review examines the history of Farmers Cooperatives in sub Saharan Africa as well as their governance structures. This

⁸Recent studies (e.g. Levi and Davis 2008; Siebert and Park 2010) have however highlighted a decline in the democratic life of cooperatives (Arcas-Lario et al, 2014) a trend which has heightened reduction in accountability and prevalence in corrupt / fraudulent activities within farmer cooperatives.

analysis provides crucial background information which will be critical to understand some of the results that are presented in Chapters five and six of this thesis.

Collective action through mutual cooperation is not a recent phenomenon in Africa. Schwettmann (2014) for instance argues that “in early human societies, people learned to cooperate and work together to increase their success in hunting, fishing, gathering foods, building shelter and meeting other individual and group needs”. Furthermore, cooperation between African community members until this day remains embedded in the form of common property, shared water and grazing rights and early agriculture would have been impossible without mutual aid among farmers as they relied on one another to clear land, harvest crops, build barns and share equipment. Indeed, these traditional self-help groups (which continue to exist to this day) demonstrate many of the values and principles of modern cooperatives. As Schwettmann (2014) further explains, “these traditional African forms of cooperation and solidarity are often locally rooted, defined by the boundaries of a certain community and the social classes within that community” and cooperation between the members is based on a common bond often derived from ethnic origin, social class, religious beliefs, professional occupation or a combination of these factors.

Various scholars (see for example, Develtere et al, 2009; Kaumba, 2012 and Schwettmann, 2014) identify four distinct generations of cooperatives in sub Saharan Africa: First generation cooperatives during the colonial period; Second generation cooperatives after attainment of national independence; Third generation cooperatives after the implementation of structural adjustment programmes and Fourth generation contemporary cooperatives. The distinct attributes characterising each generation of the above mentioned cooperatives are discussed in detail below as they set the context for the case study:

2.3.1 First Generation Cooperatives

These were introduced by colonial administrators during the colonial era to organise production, marketing and exporting of commodities such as cocoa, coffee and cotton as raw materials for industries and markets in Europe. As Schwettmann (2014) explains, the first generation cooperatives were introduced in most African countries “by colonial powers who sought to replicate their domestic cooperative structures throughout their

colonies". Kaumba (2012) traces the first cooperative to have been established in Zambia to 1914 when European settler farmers joined efforts mostly to promote marketing of agricultural produce to the new copper mines. At that time, cooperatives emerged as a felt need by members and were mainly intended to protect the settler community under colonial policy. Cooperatives in former British colonies such as Zambia (then Northern Rhodesia) were established following a British – Indian pattern of cooperation defined by the establishment of specific cooperative acts and the establishment of an implementing agency, the Registrar and / or Commissioner of Cooperatives (Schwettmann, 2014). The British colonial administration focused on developing the established cooperatives into powerful business ventures but still controlled much of the agricultural production, marketing and processing in the rural areas particularly for export crops. The French colonial administration established cooperatives in the 1920's that were referred to as "Sociétés Indigènes (later "Africaines") de Prévoyance". While these cooperatives in theory, were established to foster rural development, in practice the French colonial powers manipulated the structures to dominate the indigenous rural populations and to collect taxes. The laws introduced by the French colonial authorities made it compulsory for African natives to be members of the established cooperatives managed by French colonial officers aligned with administrative boundaries. These cooperatives however gained little economic and societal importance.

2.3.2 Second Generation Cooperatives

These were initiated by the governments of newly independent African states as a strategy to promote rural development. Indeed, as Schwettmann (2014) explains, "after independence, newly independent governments of many African countries, regardless of their colonial history, discovered cooperatives to be tools to implement the ideal of African socialism, as a third way between capitalism and communism" noting that many of these countries became independent during the US: Soviet Union cold war. In Benin for example, in 1961 Rural Renovation Cooperatives ("coopératives d'aménagement rural") were established by law to facilitate the cultivation of food crops. These cooperatives were put under government management and steering (Develtere et al, 2009). Similarly in Tanzania, following a Presidential Commission of Inquiry conducted in 1966, sixteen cooperative unions as well as hundreds of primary societies were taken over by the State (Develtere et al, 2009). Under the wing of the government, the political authorities at the

time had full confidence in the cooperative sector and consequently cooperatives were rewarded with a prominent place in politicians' development rhetoric and strategies. Leopold Sedar Senghor, a poet, politician and cultural theorist who for two decades served as the first black President of Senegal, hailed cooperatives for promoting "village socialism". Similarly Julius Nyerere, who also served as Tanzania's President applauded cooperatives for promoting "African socialism". As Develtere et al, (2009) explain "because of this full confidence in the cooperative formula", the cooperatives were "given special treatment and advantages – often monopoly or monopsony positions". This was the case for instance in Uganda, Cameroon and Tanzania where cooperatives were granted a virtual monopoly in cotton ginning, coffee processing, purchase of export crops and distribution of agricultural inputs (see for example Develtere et al, 2009; Schwettmann, 2014).

Getnet and Anullo (2012) indicate that this generation of cooperatives were mainly "state invented tools" meant for implementing planned development activities. They were in principle "channels for government sponsored credit and input supply and marketing programs" (Getnet and Anullo, 2012) which had to operate under close state guidance and control through cooperative supervisory authorities which in most cases were not only inefficient but also expensive to maintain⁹ (Schwettmann, 2014). As such, the cooperatives at the time were not genuinely driven by the membership but rather by the state authorities which made them unsustainable as the ownership, voice and rewards secured by smallholder farmers was weak (see Vermeullen and Cortula, 2010) while the risks remained significant. Consequently, the cooperatives limited impact in poverty reduction provoked significant debate whether they were appropriate and credible institutions to organise the poor out of poverty (Getnet and Anullo, 2012).

As Pinto (2009) explains, cooperatives at the time "functioned as extended arms of the state" and they gained many benefits including exclusivity in the distribution of foodstuffs

⁹ It is important to note that government policies which enabled the establishment of cooperative supervisory bodies were extensively supported by development partners, including bilateral institutional donors and the United Nations. These bodies therefore also have to accept part of the blame for the aberrations of the time which largely resulted in member's weak control of the cooperatives.

and export of agricultural products, fiscal exemptions, credits as well as donations. As the farmers were obliged to join a cooperative, they (the farmers) did not regard the cooperative as their own organisation. This was the case in many former Soviet States as well as in young free nations such as Mozambique, Zambia, Zimbabwe and Tanzania and elsewhere in Africa (Pinto, 2009). Develtere et al (2009) further explain this point as they indicate that “in many countries, governments shifted their initial policies of cooperative development from inducement to, more or less coercion. In this sense, the cooperative sector lost its voluntary character completely and strictly became subject to political and ideological imperatives”. It is in this respect that Schwettmann (2014) further argues that cooperatives at the time became “mass organisations of the ruling party” which carried out government functions such as the management of the strategic grain reserves. While in theory cooperative development was supposed to be both voluntary, in practice however being voluntary was viewed by political actors as slowing down development and attainment of mass scale in terms of participation of the rural smallholder producers (Pinto, 2009). In order to rapidly achieve scale, governments made cooperative membership compulsory as a strategy to accelerate implementation of government development programs.

The state led efforts to use cooperatives as agents for rural development collapsed mainly due to the excessive government involvement in the running of cooperative affairs which virtually turned cooperatives into government parastatal institutions (Kaumba, 2012). In Uganda, cooperatives during this period were also affected by the civil wars which led Obote to be toppled by Okello who in turn was also removed from power by the current President Yoweri Museveni’s National Resistance Movement in 1986. As Nannyonjo (2013) explains, Ugandan cooperatives during this period incurred significant “war losses in the form of people and property”. Cooperative movements in strongholds for instance in the Luwero triangle where three giant farmers unions operated in West Mengo, Wamala and East Mengo were destabilised as the guerrilla warfare intensified (Nannyonjo, 2013).

Develtere et al (2009) also explain how cooperatives were used as a social control instrument as a number of strategic political measures were used to discipline the cooperative movement. For example, cooperative leaders were incorporated into the

political systems and were used to promote a patronage system designed to strengthen the political ruling party interests. Taking note that the dominant situation at the time was that most of the cooperatives had illiterate committee members, the loss of the few capable cooperative leaders and managers to the political arena created serious capacity gaps as it became increasingly difficult for cooperative committees to supervise technical operations related to the cooperative activities (Develtere et al, 2009). Kabuga (2005) laments that every “Tom, Dick and Harry regardless of their motives, integrity and competencies could invade and assume a leadership role in the cooperative movement” and this opened “the floodgates for nepotism, corruption, mismanagement and financial indiscipline” (Develtere et al; 2009). Furthermore, Holmen (1990) argues, the political patronage eroded the autonomy and economic rationale of cooperatives and this resulted in widespread inefficiencies and mismanagement. Understandably, farmers grew increasingly sceptical and their trust in the cooperatives diminished as they realised the level of state interference in the cooperative activities and rampant corrupt activities that also ensued. These factors contributed to the rapid devaluation of cooperatives as a policy instrument for rural development.

2.3.3 Third Generation Cooperatives: End of Government Control

Third Generation Cooperatives marked the end of Government controls as towards the mid-1980s, most African governments, development practitioners and the general public increasingly became disillusioned by the poor performance of cooperative movements which had “become a burden to the state and the public” (Schwettmann, 2014). At the time, many African countries were also experiencing severe economic and financial crisis which resulted in the implementation of the World Bank and International Monetary Fund (IMF) prescribed Economic Structural Adjustment Programme (ESAP), an initiative which was intended to bring about economic stabilisation and improve resource allocation. As Schwettmann (2014) explains, “the Structural Adjustment Programmes (SAPs) did not fail to pinpoint the inefficient, often corrupt cooperative organisations and associated supervisory and support bodies as targets for structural reforms”. The introduction of ESAP further worsened the performance of farmer cooperatives in several African countries as ESAP policies resulted in liberalisation of agricultural markets and privatisation of public institutions as well as the introduction of significant cuts in public spending and funding that had previously been available for services in many sectors. As Nannyonjo (2013) explains the buying monopoly that government

parastatal institutions had previously enjoyed was abolished and government boards on which cooperatives largely depended for crop and marketing finance were abolished. These changes consequently reduced the provision of crop finance by government which weakened the ability of cooperatives to purchase produce from smallholder farmers. Kaumba, (2012) explains that “the hand of government was swiftly withdrawn and the survival of cooperatives became dependant on the individual co-operators”. In addition, cooperatives in Zambia, for instance, during this period were heavily indebted with severe weaknesses in entrepreneurship, management and lacked committed leadership with the relevant business skills to allow the cooperatives to seize business opportunities that the liberalisation policies offered. Consequently, the cooperatives failed to cope with the policy changes and general expectations of a liberalised economy (Kaumba, 2012).

Market liberalisation therefore resulted in cooperatives losing the market monopoly which they had previously enjoyed. The cooperatives were consequently exposed to competition (which they were not used to) from agribusiness companies that had superior organisational and managerial capabilities and access to cheaper working capital and improved technologies (Nannyonjo, 2013). As part of the market liberalisation policies, the cooperatives were provided with greater degree of autonomy to be able to manage their own affairs with no political interference. Services that previously had been provided to the Cooperatives by the Government such as audits, education and training as well as financing were cut. The failure by the cooperatives to adjust to these changes at the time resulted in a sharp decline of cooperative marketing and the cooperative movement as a whole. As Nannyonjo (2013) explains “most of the unions collapsed due to lack of crop financing” which in turn “affected the continued survival of the primary societies” In Zambia for instance, the economic base of the Zambia Cooperative Federation (ZCF) was weakened and this compromised its ability to effectively play its role for instance in staff training, advocacy and as an effective source of information for its members. The networking and visibility of ZCF at the international level was also adversely affected as the organisation could not even afford to regularly pay affiliation fees to international bodies (Kaumba, 2012).

In conclusion, as Schwettmann (2014) correctly explains, the Economic Structural Adjustment Programmes brought to light a triple crisis for this generation of cooperatives:

- A crisis of identity as the existing cooperatives was by name only and did not reflect the voluntary nature and membership control which should be at the centre;
- A crisis of environment as the legal, institutional and administrative context did not support the emergence of genuine, self-managed cooperatives; and,
- A crisis of management as this generation of cooperatives was unable to survive without subsidies, state protection and government control.

These factors ultimately led to the collapse of most state sponsored cooperative movements in Africa and general decline in their numbers, membership and economic importance.

2.3.4 Fourth Generation Cooperatives

Agricultural cooperatives that survived the economic structural adjustment programmes as discussed above, formed the basis of the emergence of the fourth generation of African cooperatives that we witness today. Several studies indicated that third generation cooperatives had mainly been “created and shaped by external patrons, particularly governments and donors” (Develtere et al, 2009). World Bank studies which were conducted by Hussi et al (1993) and Porvali (1993) in six African countries namely Ghana, Kenya, Niger, Nigeria, Senegal and Uganda underlined the need for development stakeholders to assist governments to establish an enabling legislative environment and institutional reforms that would empower cooperatives and other rural organisations to evolve into efficient and sustainable organisations managed by their members and capable of providing competitive services. This has been the main approach until this day in the engagement strategy with cooperatives.

Fourth generation cooperatives are those operating in the post market liberalisation period, in a competitive environment. Getnet and Anullo (2012) argue that “these are the genuine, autonomous” cooperatives “free from government influence”. Liberalisation and globalisation are considered as key factors which influence how fourth generation cooperatives are evolving. As Getnet and Anullo (2012) further explain, fourth generation

cooperatives are “considered as grassroots based self-help business enterprises operating autonomously in a dynamic and competitive business environment”. Shigetomi (1992) argues that the market liberalisation and globalisation trends has bestowed new functions on cooperatives particularly in response to the problem of market failure which threatens to exclude the poor from participating in contemporary agribusiness value chains. Indeed as Getnet and Anullo (2012) explain, “market failure opened the way for cooperatives to improve equity, inclusiveness and democratization”. This potential to contribute towards poverty reduction has however remained not fully explored as the development of cooperatives has been limited by inadequate research and there is a vacuum of up to date literature on the status of cooperatives after the liberalisation of agriculture by most African countries in the mid-1990s (Wanyama et al, 2008). Kwapong and Korugyendo (2010) further argue that policy makers, development practitioners and other related stakeholders continue to harbour outdated views on cooperatives¹⁰ and in the process hampering progress in the agribusiness sector. While most agricultural cooperatives in Uganda for instance had failed to provide sustainable services to smallholder farmers during the period prior to market liberalisation, Kwapong and Korugyendo (2010), based on case study findings¹¹ drawn from Eastern and Western Uganda, argue that there is a recent revival and reform of agricultural cooperatives in Uganda. These researchers argue that following the liberalization of agricultural markets in Uganda, the cooperative sector has been undergoing a dynamic process of rehabilitation and restructuring to align to the operating demands of a liberalized economy. The views presented by Kwapong and Korugyendo (2010) are supported by Nannyonjo (2013) who also concludes that farmer cooperatives in Uganda are increasingly playing a major role in financial resources mobilisation, agro-processing and marketing of agricultural products. Nannyonjo (2013) argues that the government of Uganda has “realised that, the full potential of the cooperative enterprise in fostering development is yet to be harnessed due to internal problems related to governance and

¹⁰ These views are traced back to the poor performance of cooperatives mainly during the 1980s and 1990s prior to market liberalisation as explained in the discussion above.

¹¹ The results from this study indicate that a total of ninety two percent of the respondents sampled under the study perceived their incomes to have increased as a result of the activities of the reformed cooperatives.

leadership, poor capitalisation, inadequate knowledge, management information systems and expertise in managing cooperatives”.

2.4 Cooperative Governance

Governance related issues can position the current cooperative organisations either to fail or to succeed in providing sustainable agribusiness services to smallholder farmers. These factors can be classified as internal or external to the cooperative. Internal factors relate to the cooperative management attributes and include governance, leadership and managerial skills. External factors on the other hand relate to conditions in the operating environment such as government policies, regulatory frameworks and available market infrastructure (Nkhoma, 2011). Some of the internal and external factors which affect the performance and sustainability of contemporary cooperatives are summarised (Table 11) and are further discussed.

Table 11: Internal and External Factors affecting cooperative success

Internal Factors	External Factors
<ul style="list-style-type: none"> • Governance structure • Member participation • Member commitment • Leadership • Communication • Managerial Skills • Business Volume • Type of product and product quality • Competitive Strategy • Risk Management 	<ul style="list-style-type: none"> • External Assistance • Government policies • Regulatory Framework • Marketing system and infrastructure

Source: Adapted from Nkhoma (2011)

2.4.1 Governance Structure

Cooperatives have a unique governance structure which makes them different from corporate firms or investor owned firms. In line with the cooperative guidelines set by the International Cooperative Alliance in 1995, cooperative governance structure should

reflect principles of being a user owned, user controlled institution where policy decisions are made by members based on democratic principles of one member, one vote, regardless of any member's investment in the cooperative. Rhodes (2007) defines cooperative governance as a form of public administration, governing with and through networks. Nkhoma (2011) on the other hand sums up cooperative governance as involving decision making processes and the capacity to implement decisions which should represent the interests of the membership. The governance of member organisations such as cooperatives can be very challenging and yet important for the continuity and sustainability of cooperatives (Nkhoma, 2011). Indeed, cooperative management faces the difficult of matching the conflicting interests of members and market needs. One manifestation of this is the time taken for cooperatives to make democratic decisions versus the limited time windows to exploit market opportunities.

While cooperative management structures are required to guard member interests, for the cooperative organisations to be competitive on the market, this often requires adoption of performance enhancing strategies which are not always popular with the membership (Cook, 1995; Cornforth, 2004 and Nkhoma, 2011). In addition, the problems inherent with cooperative governance include free riders along with horizon, control and influence costs (Cook, 1995). Valentinov (2007) acknowledges that these incentive problems often propel doubt about the sustainability of cooperative business activities. The free rider problem, also referred to as the common property problem by Royer (1999) emerges when property rights are not tradable or when they are not sufficiently defined and / or enforced to ensure that each cooperative member bears the full cost (or benefits) of their actions. The horizon problem on the other hand relates to scenarios whereby the cooperative focuses more on short term benefits at the expense of its long term viability (Nkhoma, 2011; Staatz, 1989). This results in the cooperative members reduced interest to invest in the long term strategic decisions of the cooperative and ultimately compromises the cooperative competitiveness in the market.

2.4.2 Member Participation

Activities that promote member participation enhance the cooperative market competitiveness (Nkhoma, 2011). Members can participate in the cooperative activities through different mechanisms including attendance of meetings, serving on established committees as well as recruitment of new members. Indeed, as Nkhoma (2011) explains

“participation of members in the governance of a cooperative is what differentiates cooperatives from other business organisations such as investor owned firms”. Borgen (2001) concluded that there was a positive correlation between member’s loyalty to cooperative activities and the level of their participation in the decision making processes. These findings are in line with the conclusions made by Osterberg and Nilson (2009) who also argue that there is a significantly higher level of member disloyalty when they are dissatisfied with their cooperative management and perceive themselves to be disconnected from the operational activities of the cooperative. This confirms the importance of having a well-functioning democracy within cooperative governance. The more the members participate in their cooperative, the more they will be committed to the cooperative business activities (Nkhoma, 2011); however, this may lead to increased time to make decisions where the market may have moved on.

2.4.3 Member Commitment

Smallholder farmer’s commitment is important for the successful performance of the cooperative business activities. As an example, decisions by members to increase or reduce output volumes of produce which they market through the cooperative (or even to completely withdraw) have far reaching implications on the business viability and survival of the cooperative; indeed this could be viewed as a form of opportunistic farmer behaviour. Fulton (1999) defined member commitment as “preference by the members for something that is offered by the cooperative and not by other alternative organisations e.g. investor owned firms”. Several scholars (e.g. Fulton and Giannakas, 2001) identify several factors which promote member commitment to the cooperative activities; these include: benefits received from the cooperative, level of member’s participation in the cooperative governance processes, effectiveness of the cooperative grievance / dispute resolution systems, and, ability of the cooperative to translate member’s needs into actionable interventions. Cook and Burrell (2009) also highlight the heterogeneity of cooperative members as a key challenge as this makes it difficult for cooperative management to consolidate the diversity of member’s interest. Consequently, the heterogeneity of the cooperative members often results in the passivity of members who may feel alienated and consider that their needs are not being given due attention by the cooperative. It is in this respect that scholars (e.g. Cook, 1995

and Seabright, 1997) concluded that excessive heterogeneity of membership contributes to a breakdown in cooperative action.

2.4.4 Leadership

Nkhoma (2011) argues that cooperative leadership is crucial in the implementation of policies and activities which are required to continually enhance the business operations of the cooperative. When a cooperative experiences leadership problems, albeit democratic, this leads to organisational failure. Fulton (2001) explains that organisational failure occurs at a time when the organisation fails to adopt and implement the most efficient policies for its members. Consequently this leads to poor performance and the cooperative in this instance is more likely to be pushed out of the market by other efficient organisations / market players. There is need therefore for cooperatives to elect visionary leaders through transparent election processes whereby candidates do not secure votes through manipulation (Nkhoma, 2011). Competent leadership should promote implementation of policies and decisions that are based on the cooperative values and empower the membership to ensure transparency and leadership accountability.

2.4.5 Communication

Scholars such as Borgen (2001) emphasise the importance of establishing efficient communication in a cooperative organisation to facilitate the transfer of information from the cooperative organisation to its members (and vice versa). Nkhoma (2011) strongly argues that efficient communication is required to encourage member participation in the cooperative activities and to ensure that members are aware of ongoing activities and identify themselves with the cooperative organisation. Borgen (2001) concludes that the more farmers identify themselves with their cooperative, the more confidence they develop in the cooperative management. Nkhoma (2011) further argues that an efficient communication system designed to facilitate the transmission of information through various channels is important and should also enhance leadership accountability, an important factor required for the establishment of a viable cooperative organisation.

2.4.6 Managerial Skills

Competent management skills are required for the business success of any organisation. For a cooperative organisation, hired management staff as well as the board should possess competent management skills to steer the cooperative business activities to profit. Stringfellow et al (1994) conclude that most initiatives that are supported by Non Governmental Organisations (NGOs) to promote farmer cooperation do not always produce cooperatives that are viable in the long term largely due to the level of organisation and managerial capacity of these cooperatives which does not match management skills required especially when dealing with markets. Cook (1994) also argues that the dilemma for cooperative management relates to the conflicting need to protect membership interests and while being responsive to market requirements in order to be competitive. This places increased demands for competent leadership skills in the steering of cooperative business activities. These observations are confirmed by Nyoro and Ngugi (2007) who identified that successful cooperatives had staff and a management committee that had relatively higher qualifications than the unsuccessful cooperatives. In the same vein, Keeling et al (2004) concluded that the closure of the Rice Growers Association in California was largely due to the lack of board oversight, education, ineffective management and passive membership.

2.4.7 Business Volume

The main business strategy of a cooperative organisation centres on attaining large volumes of business to enable it to benefit from economies of scale. As Nkhoma (2011) explains “when volumes increase, the cost of transaction per unit item is expected to decrease”. The transaction costs can also be reduced through increased frequency of business transactions taking note that the more frequently the transaction takes place, the lower the fixed costs per unit. Bonaszak (2008) indicates that the frequency of business transactions can be increased by a cooperative by increasing its membership. Reduced transaction costs result in the increased profitability of the cooperative and in turn more income earnings for the cooperative members. Nyoro and Ngugi (2007) in their study on dairy and coffee cooperatives in Kenya concluded from the study results that the cooperatives which had more members and handled large volumes of produce were more successful.

2.4.8 Type of Product & Product Quality

For any agribusiness venture to be profitable, it is important for the entrepreneur to select the correct type of product to supply to the market as well as to build the skills required to comply with the quality level required by the market. In this respect, as Nkhoma (2011) correctly explains “the type of product which a cooperative is dealing with may affect its success”. While Markelova et al (2009) indicate that higher value crops offer higher returns for instance in comparison to staples, the production and marketing of the higher value produce often requires greater technological and marketing skills which the cooperative membership may not always have at their disposal (Nkhoma, 2011). Cooperatives which concentrate on the production and marketing of staples often benefit from bulk buying of inputs as well as availability of infrastructure for produce storage. These incremental effects however are not always sufficient to offset the transaction costs involved. The cooperative therefore needs to consider all these factors when selecting the type of product that its members will supply the market to ensure sustainability of the enterprise.

2.4.9 Competitive Strategy

Cooperatives operate in a market system that has other players who compete with the cooperative to capture the market and secure profit. The success of any cooperative therefore relies on the competitiveness of its production and marketing strategy and evidence from research (see for example Kyriakopoulos and Moorman, 2004) places emphasis on the need for any business to be market oriented. As Narver and Slate (1990) explain market orientation requires any business to be competitor and customer oriented to develop a coordination mechanism that allows it to meet the stated requirements of the target market. It is for this reason that Nkhoma (2011) for instance further argues that “a cooperative success and sustainability will be influenced by its ability to acquire information about its competitors and customers in the target market apart from its internal coordination functions”.

Evidence from literature highlights a plethora of strategies that enhance cooperative competitiveness such as joint ventures and strategic alliances with other value chain actors (Fulton et al, 1996; Dyer and Singh, 1998), information sharing and lowering of transaction costs (Markelova et al, 2009), establishing marketing agreements to build

business volume (Bruynis et al, 2001) and vertical / horizontal integration (Nyoro et al, 2007). Another key factor highlighted by literature to be crucial in enhancing business competitiveness is trust (see for example Kwon and Suh, 2004; Morgen and Hunt, 1994). Nkhoma (2011) argues that trustworthiness on the part of cooperatives enhances their business relationship with the other actors that cooperatives depend on. Trust is a central component to this thesis and therefore extensive literature on this factor is presented in chapter 3.

2.4.10 Risk Management

Agricultural cooperatives like all agribusinesses operate in an inherently risky environment. Many risk management tools exist but agricultural cooperatives have been slow to adopt sophisticated risk management practices (Manfredo et al, 2003). The risks to farmers' cooperatives can be both as a result of internal and external factors. Many of the internal factors are linked to inefficiencies discussed above while external factors include donor assistance, government policies, regulatory framework, marketing systems and infrastructure.

External interference in a cooperative organisation's management often poses significant threats to the sustainability of the business. External assistance often creates a dependence syndrome which can affect the success and sustainability of the cooperative. Several scholars (e.g. Rankin and Russell, 2005) explain how government or donor funding often compromises cooperative management control through imposition of external agendas and politicisation of the organisation which in turn has the effect of lowering commitment on the part of the membership. Nkhoma (2011) also notes that external assistance often contributes to free riders and adverse member selection problems as external support may attract individuals that are after the benefit and yet not committed to the cooperative success. In the same vein, Chibanda (2009) observed that some farmers formed cooperatives as a way of accessing government grants rather than to engage in business activities. Government policy and regulatory frameworks are also important as they define a business environment that can either enable the cooperative activities to blossom or to fail. National regulatory frameworks for instance provide guidance on contract enforcement mechanisms that can either promote fair play

and healthy competition between value chain actors or promote corrupt and / or manipulative behaviour (Nyoro and Ngugi, 2007).

2.5 Conclusion

This chapter has presented the concept of inclusive business and explained how this is increasingly becoming an important strategy for poverty reduction and strengthening smallholder farmer's incomes in developing countries. Various business models that relate to promoting smallholder farmers participation in agribusiness value chains have been presented along with their advantages and limitations. As stated by Vermeullen and Cortula (2010), no single business model stands out as the best fit for smallholders as all have positive and negative aspects that need to be considered on a case by case perspective.

Because of the case study selected for field research, additional emphasis has been placed on the history of farmer's cooperatives in sub Saharan Africa and the internal governance factors that can either promote the success or failure of the cooperatives. The discussion has highlighted the importance of a market oriented strategy in the context of external factors to guide the cooperative production and marketing activities.

As indicated above, this strategy, amongst other factors, should seek to promote the development of trust between the cooperative and other value chain actors. Chapter 3 provides a comprehensive review of the theoretical concepts around trust to highlight importance in strengthening the market position of cooperatives and similar farmer owned businesses for the benefit of the membership while Chapters 4 and 5 explore a case in point in Livingstone, Zambia.

Chapter 3: Trust and exchange relationships

This chapter provides a theoretical review of the trust construct particularly in supply chain exchange relationships and highlights the main discussion points that have emerged over the last two decades. The discussion focuses on the relationship between trust and performance in supplier – buyer exchange relationships. More specifically, the chapter provides a theoretical review of the relationship between trust and information sharing, relation specific investments, transaction costs as well as commitment to the exchange relationship.

3.1 Trust in Supply Chain Relationships

In the past two decades, scholars and development practitioners have increasingly focussed attention on the performance implications of cooperative exchange relationships brought about and managed through various mechanisms including trust (Morgan and Hunt, 1994). Trust in exchange relationships has been hypothesized to be a valuable economic asset (Morgan and Hunt, 1994; Dyer, 1997; Kwon and Suh, 2004) and participants in exchange who trust one another reportedly obtain a variety of performance related benefits including lower transaction costs and increased flexibility between the exchange partners in order to: respond to market changes (Sako, 1991; Poirier, 1999), lower opportunism (Wicks, Berman and Jones, 1999; Kirsten and Sartorius, 2002; Batt, 2003; Andrade and Castro, 2007), and greater commitment and loyalty which results in less propensity to switch (Kirsten and Sartorius, 2002; Batt, 2003).

Poirier (1999) contends that the lack of trust in supply chains is “the single biggest obstacle to advancing supply chain improvement”. In the same light, an earlier study conducted by Sherman (1992) concluded that one third of all strategic alliances failed due to a lack of trust among the trading partners. Spekman (1988) in the same vein argued that trust is the “cornerstone of a strategic partnership”. The importance of trust is also often linked to the performance efficiency of national economies as scholars such as Fukuyama (1995) argue that the economic success of a nation “as well as its ability to compete is conditioned by ‘the level of trust inherent in the society’”. Understandably given the much publicised claimed importance of trust in economic exchanges, most scholars have been preoccupied over the last two decades with the question presented

by Dyer (1997) “Does trust really pay off in hard economic benefits or does this feel good approach to economic exchange relationships bring only marginal benefits?”. Zucker (1986) argues that “for a concept that is acknowledged as central, trust has received very little empirical investigation”. Dyer (1997) explains that while trust for example is argued to reduce transaction costs in exchange relationships, the empirical studies confirming this hypothesis are limited and this is often because concepts such as trust and transaction costs are difficult to operationalise. In the same vein, Williamson (1985) acknowledged that most studies investigating the relationship between trust and transaction costs rarely attempted to employ direct measures of transaction costs.

3.1.1 Defining Trust

In this study, trust is generally considered as being a social construct of one party (trustor) willing to rely on the actions of another (trustee) in relation to ‘anticipated’ future actions whether this be in a community or business context. Several scholars have presented interesting definitions of trust. Morgan and Hunt (1992) conceptualise trust as one party’s confidence in an exchange partner’s reliability and integrity. This definition links with Rotter’s (1967) classic view that trust refers to the expectancy by one party that “the word of another can be relied upon”. Dyer (1997) argued that trust refers to “one party’s confidence that the other party in the exchange relationship will not exploit its vulnerabilities”. This definition relates to the argument presented by Brenkert (2000) and Batt (2003) who both conceptualised trust as resembling the belief or an expectation that the vulnerability resulting from the acceptance of risk will not be taken advantage of by the other party in the relationship, especially the party that possesses greater power. The trust that an exchange partner will not exploit another’s vulnerabilities emerges from the confidence in another’s goodwill (Ring and Van de Ven, 1992) and the belief that a business partner will perform actions that will result in positive outcome for the exchange partners and not take unexpected actions that may result in negative outcomes (Anderson and Narus, 1990). Batt (2003) explained trust between growers and market agents as an expectation of high returns arising from their trading relationship even when there is some uncertainty associated with their transactional relationship. He proceeds to argue that in the absence of complete information, trust represents the willingness of an exchange partner to make oneself vulnerable to the actions of another party in the

expectation that the other party will perform a particular action that will lead to the attainment of positive gain by both parties.

Moorman et al (1993) and Yee and Yeung (2002) defined trust as willingness to rely on an exchange partner's attributes with confidence. The confidence (trust) in an exchange partner is cemented when situations arise demanding the "trustworthy party" to demonstrate the following attributes:

- Make good effort to behave in accordance with prior commitments (Dyer, 1997; Batt, 2003; Kirsten and Sartorius, 2002)
- Demonstrate flexibility, as market conditions change, in ways perceived to be fair by the exchange partner
- Refute from taking unfair advantage of the exchange partner even when an opportunity arises.

The above definitions provided by the various scholars all indicate that the trust construct is rooted on three key pillars (1) reliability (2) fairness and (3) good will (Figure 6)

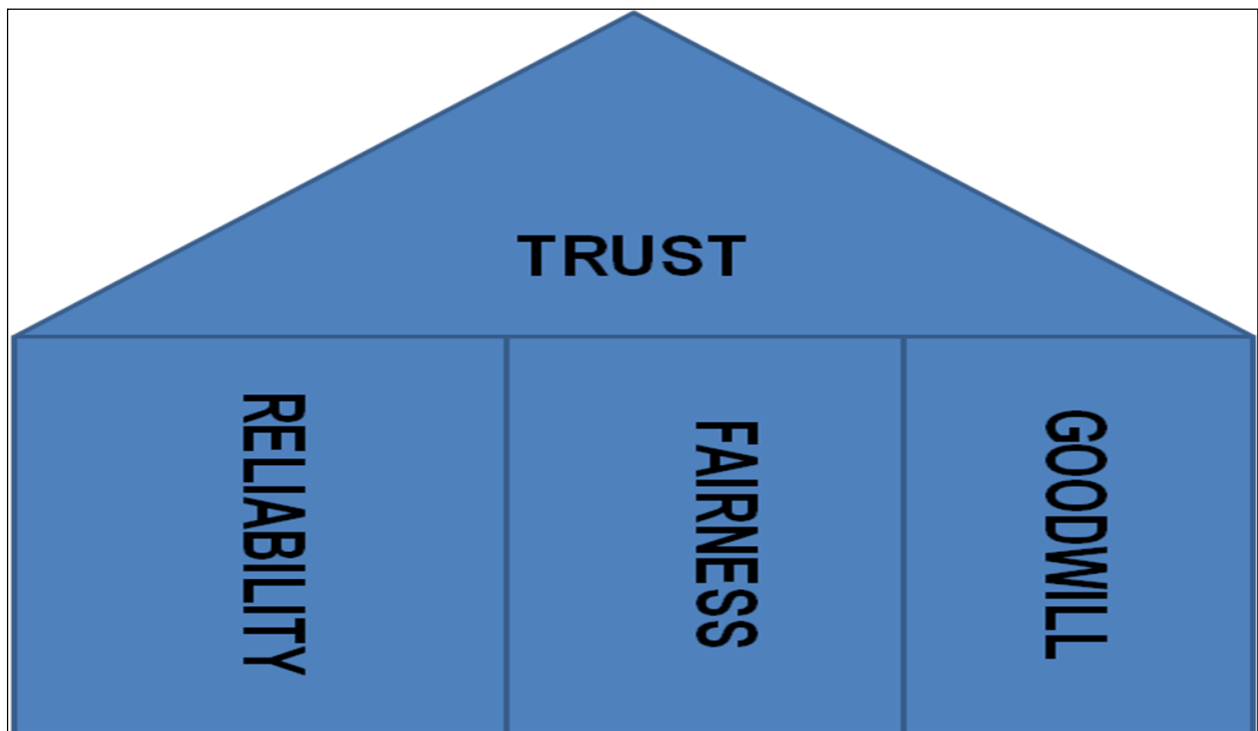


Figure 6: Pillars of Trust in an exchange relationship

Adapted from Morgen and Hunt (1992)

Batt (2003) contends that trust between exchange partners is critical if two situational factors are present, namely risk and incomplete buyer information. Given the fact that most transactions present some degree of risk and uncertainty between the exchange partners, Batt (2003) argues that trust acts as an information resource that reduces the perceived risk and reduces transactions costs in an exchange relationship (Ganesan, 1994; Doney and Cannon, 1997).

Alternatively, trust could be viewed as a substitute for incomplete buyer information that helps to reduce “perceived” risks. Trust therefore can be categorized as a catalyst that renders the exchange partners free to act in situations where they are unable to acquire sufficient information (Selnez, 1998, Batt, 2003) or where the exchange partners must process more information than they are capable of handling (Tomkins, 2001).

3.1.2 Dimensions of Trust

Several scholars have divided trust to various dimensions (e.g. Dyer, 1997; Sako, 1997; Kirsten and Sartorius, 2002; Batt, 2003). Economic literature suggests that trust primarily involves a calculative process (Williamson, 1996). In this instance, the benefits of cheating are deemed not to exceed the costs of being caught (Andrade and Castro, 2007) and therefore it would be contrary to the exchange partner’s interests to engage in opportunistic behaviour (Wicks et al, 1999). Sako (1997) identified three types of trust as competence trust, good will trust and contractual trust:

- **Competence based trust** is rooted on the expectation that the exchange partner will perform their role competently. It is pivoted on the confidence that the trading partner has the required professional, technical and managerial skills required to ensure the success of the transactional relationship between the parties (Batt, 2003; Puspitawati, 2011). It is in this respect that Andrade and Castro (2007) argue that competence based trust is “built on the basis of a review of the partner’s capabilities whereby an exchange partner assesses the other party’s ability to meet his or her obligations” leading to the delivery of desired transactional outcomes (Mayer et al, 1995).
- **Goodwill trust** refers to the expectation that the exchange partner will uphold moral obligations and responsibility demonstrating a special concern (dependability, responsibility, and integrity) for the trading partner’s interests

above their own (Rempel et al., 1985; Ring and Van de Ven, 1992). Goodwill trust can be linked to affection based trust described by Andrade and Castro (2007) as “the benevolence of an individual towards a relationship”. In this instance, the benevolence demonstrated by the exchange partner is rooted by concern for the well-being of the exchange relationship rather than the goal of improving own welfare at the expense of the partner’s interests (Morgan and Hunt, 1994). Affection is an emotion felt by people in a relationship. Trust, in this instance, emerges from an emotional bond between the exchange partners and this enables the parties to move beyond rational prediction and to take a leap of faith that trust will be honoured (Wicks et al., 1999; Andrade and Castro, 2007). The emotional connection between the exchange partners is also rooted, to a large extent, in the belief of the moral character or good will of the trustee in the exchange relationship (Andrade and Castro, 2007). Swan et al., (1985) indicate likeability of an exchange partner as one of the key dimensions in developing trust. The affective aspect of trust has a clear moral element (Andrade and Castro, 2007) and Batt (2003) argues that an exchange partner who demonstrates good will trust is dependable and can be granted some discretion because they can be trusted to take initiatives while refraining from taking unfair advantage of the exchange partner.

- **Contractual trust** implies mutual understanding between the exchange partners that each will do what they say they will do (Reina and Reina, 2007). Managing expectations, encouraging mutually-serving intentions and keeping agreements are examples of behaviours that build contractual trust. When practiced, exchange partners understand what is expected of them, roles and responsibilities are clear, promises are kept or renegotiated; individuals collaborate freely, depend on each other, and perform consistently. When an exchange partner focuses on themselves and lose sight of others, agreements may not be kept. Failure to keep agreements breaks down collaboration and affects others’ ability to deliver (Reina and Reina, 2007)

Geyskens and Steenkamp (1995) conceptualise trust as encompassing two essential elements; honesty and benevolence. They define honesty trust as the belief that the partner will uphold their commitments and that they will fulfil the agreed role obligations

sincerely. Johnson and Grayson (1998) add competence, reliability and dependability as critical to trust while Moorman et al.,(2003) suggest that the interpersonal factors that most affect trust include perceived expertise, sincerity, integrity, tactfulness, timeliness and confidentiality. Puspitawati (2011) suggests that the multi-dimensional variables of trust in an exchange relationship between growers and market agents are expected to be influenced by price satisfaction, reputation, flexibility, joint problem solving and communication.

3.1.3 Building trust between exchange partners

Batt (2003) explains that trust between exchange partners does not emerge as a spontaneous reaction. Rather, it is a product of an extended period of experience with an exchange partner (Lane, 2000, Kirsten and Sartorius, 2004). As Batt argues, during this time, knowledge about the exchange partner is accumulated either through direct contact or indirectly through reliable third parties. Dyer (1997) further argues that trust allows the exchange partners to acquire a long term perspective to the relationship realising that returns will be achieved over a longer period of time rather than requiring immediate or spot equity. This in turn lowers the need for the exchange partners to invest heavily in ex ante bargaining. As Morgan and Hunt (1994) contend, trust and commitment are key because they encourage exchange partners to “resist attractive short term alternatives in favour of the expected long term benefits of staying with existing partners”. In other words, they refrain from opportunistic behaviour of finding alternative suppliers or alternative markets.

Exchange partners increase confidence in each other when the transaction presents opportunities for one party to betray trust and when the party to be trusted has not taken advantage of the opportunity for the sake of mutual good of the exchange relationship (Ring and van de Ven, 1992; Kirsten and Sartorius, 2002; Batt 2003). It is in this respect that Parkhe (1993) contends that the achievement of a trusting relationship between the exchange partners requires an exchange partner to have self-control based on the realisation that future pay offs can only be achieved through non-reneging behaviour.

While trust is often linked to the quality of experience arising from repeated transactions between the exchange partners, Lane (2000) contends that trust remains a very risky

investment given the reality that an exchange partner may choose to exploit the vulnerability of the other party at any time. Indeed, the risk of opportunism is always present and often very difficult to detect (Batt. 2003). Kirsten and Sartorius (2002) explain that opportunism refers to “the incomplete or distorted disclosure of information as a calculated effort to mislead, distort, disguise, obfuscate or otherwise confuse the other exchange partner”. The motivation to engage in opportunistic behaviour arises when one party in an exchange relationship prioritises self-interest and gain at the expense of the relationship. Batt (2003) contends that such opportunistic actions by one party in an exchange relationship often provoke retaliatory behaviour as the aggrieved partner “will react with spite characterised by great emotional intensity and trust will be lost leading to the aggrieved party withdrawing from the exchange relationship completely or in some instances limiting their commitment to the relationship”. All of the above have the potential to erode social and emotional capital between the trading partners.

3.1.4 Trust and Information Sharing

During the exchange experience between the parties, Puspitawati (2011) explains that communication is one of the most important determinants for the creation and embedding of trust between the exchange partners. Anderson and Narus (1990) define communication as the formal as well as informal sharing of meaningful, timely, and frequent information between exchange partners. This definition places emphasis on the efficiency that should characterise the information exchange as well as the value of the information shared. Batt and Rexha (1999) highlight that communication impacts positively on the quality of relationship between the exchange partners. Frequent communication, is perceived to facilitate trust building which occurs as a gradual process with the amount of trust conferred by the exchange partners accumulating in small incremental steps (Lane 2000, Batt, 2003), all of which builds social and emotional capital.

Information sharing has also been cited by other studies (e.g. Andrade and Castro, 2007) as one of the most critical agents in the trust building process and is perceived to reduce the level of behavioural uncertainty (Kwon and Suh, 2004) which in turn improves the level of trust. Information sharing often requires the release of guarded financial,

strategic and other operating information to partners who might have been and/or will be competitors. Dyer (1997) argues that when exchange partners trust each other not to behave opportunistically, the parties will be willing to share confidential information including production costs, product design and process innovations. In the absence of trust, Dyer (1997) further argues that information sharing on costs or new ideas / technologies is unlikely because the parties perceive this information can be “poached” or used opportunistically. Indeed, as Kwon and Suh (2004) argue, effective information sharing is heavily dependent on trust and if information is available but cannot be shared by the partners, its value degrades exponentially.

The lack of trust in transactional relationships is perceived to cause exchange partners to restrain the sharing of potentially relevant information often critical for problem solving (Kirsten and Sartorius, 2002). In this instance, an exchange partner may be reluctant to share information that exposes their weaknesses in operations as well as their cost structure despite the fact that sharing this information with an exchange partner could result in valuable suggestions from the other exchange party leading to the formation of sustainable solutions (Dyer, 1997). Ellram and Cooper (1990) and Gardner and Cooper (1988) further contend that if supply chain partners share information openly based on a long term relationship perspective, this may even reduce the opportunistic behaviour characteristic in supply chain relationships.

Dyer (1997) explains that the willingness by an exchange partner to commit resources to mitigate the constraints limiting the other exchange party from efficient execution of agreed activities is often contingent on the constrained partner’s willingness to share information. Indeed, the ability of exchange partners to effectively diagnose problems and jointly problem solve is to a large extent dependent on the willingness of the parties to share accurate and sometimes confidential information. As such, as Dyer (1997) argues, an exchange partner may have to share information in order to solicit for resources from the other exchange party to facilitate joint problem solving. Morgan and Hunt (1994) further explain that the dynamics of contemporary supply chains entail that exchange partners should recognise that in order to “compete” effectively in modern marketing channels; they must “collaborate” with their exchange partners.

3.1.5 Trust and Transaction Costs

Dyer (1997) identified four specific costs linked to buyer – supplier exchange transactions (Table 12).

Table 12: Transactional costs related to exchange

Transaction Cost	Description
Search Costs	Refers to the costs of gathering information to identify and evaluate potential trading partners.
Contracting Costs	Includes costs linked to negotiating and writing agreements.
Monitoring Costs	Refers to the costs associated with monitoring agreements to ensure that each party in the exchange fulfils the predetermined set of obligations.
Enforcement Costs	Includes the legal charges associated with sanctioning a trading partner that does not perform according to the predetermined agreement.

Adapted from Dyer, (1997)

Trust is perceived as a mechanism of exchange control not based upon contracts or third party sanctions but rather on non-contractual mechanisms (Dyer, 1997). In this way, trust is perceived to reduce transactional costs by eliminating the need for contracts which are costly to write, monitor and enforce (Kirsten and Sartorius, 2002). Under conditions of high trust, Batt (2003) argues that exchange partners commit less time and resources on monitoring to see that the other party is fulfilling the letter and spirit of the agreement. Since the exchange partners in a trusting relationship are confident that the other party will not take advantage of them, even if an opportunity arose, both parties are

as such more inclined to commit fewer resources to transaction monitoring (Batt, 2003; Dyer, 1997, Morgan and Hunt, 1994).

The trusting relationship provides a platform for the parties involved in the exchange relationship to assume that the other party is acting in good faith and as such the trading partners spend less time wrangling over problems that emerge during the life of the exchange relationship due to mutual confidence that inequalities will be addressed fairly and equitably (Morgan and Hunt, 1994; Kwon and Suh, 2004).

3.1.6 Trust, transparency and satisfaction

Puspitawati (2011) proposes that price transparency is an important factor which influences exchange partners perceptions of trust in one another. In support of this view, Batt (2003) further argues that “channel members that are satisfied with the economic rewards arising from their exchange relationship are more inclined to perceive their partner as being more trustworthy”. As satisfaction increases, trust also increases and continues to build over successive transactions (Batt, 2003). In this respect, whenever economic outcomes are higher than expected, growers often attribute the credit to their market agents and in this process, the grower’s attraction to and trust in the preferred market agent will increase (Geyskens et al., 1998). In addition Batt (2003) also contends that given the relationship between satisfaction and channel conflict, the speed with which the market agent addresses grower’s complaints lowers the overall level of conflict in the relationship thus positively impacting on trust.

Puspitawati (2011) explains that relative price satisfaction by the growers based on a comparison of the net price received by the grower to a reference point, contributes towards the development and maintenance of trust between the growers and their preferred market agents. These views are reinforced by Batt (2003) who argues that “in situations whereby the grower secures a different net price compared to that paid by two or more market agents, the grower can be expected to channel a greater proportion of their crop to the market agent offering the highest price”. Batt (2003) goes further to point that small differences in the price received by the grower, comparable to the net amount offered by competing market agents, is unlikely to result in the grower abandoning the exchange relationship. However, over time, “where the price received by

the growers are consistently lower than those offered by other agents, growers may begin to feel that their preferred market agent is no-longer representing their best interests and invariably this will have a significant negative impact on trust” (Batt, 2003).

3.1.7 Trust, Partner Reputation and Flexibility

Morgan and Hunt (1994) highlight that an exchange partner’s reputation is central in assessing the level of trust among supply chain partners. These views are reinforced by Kwon and Suh (2004) who argue that a partner’s reputation in the market has a strong positive impact on the trust-building process, whereas a partner’s perceived conflict creates a strong negative impact on trust. As Batt (2003) explains, growers communicate amongst themselves and those agents with a reputation to engage in opportunistic trading are perceived suspiciously by the growers. These views are reinforced by Bradach and Eccles (1989) who argue that “in dynamic and continuous settings, a record of prior exchange, often obtained second hand or by imputation from outcomes of prior exchanges, provides data on the exchange process. Relationships unfold so that individuals continually update their information base and their decisions to trust.”

Heide and John (1992) identified flexibility as a dimension of relationship management practices that influences relationship outcomes. They viewed relationship flexibility as the willingness to move beyond the terms and conditions specified in contractual agreements as circumstances require. MacNeil (1980) argued that the requirement for flexibility in contracts arises as a result of the bounded rationality of manager’s decision making, the limited availability of information and non-constant state of the environment.

3.1.8 Trust and Relationship Commitment

Moorman et al., (1992) define commitment as “an enduring desire to maintain a valued relationship”. This definition illustrates that relationship commitment can only exist when a relationship is considered important by an exchange partner. Berry and Parasuraman (1991) maintain that “relationships are built on the foundation of mutual commitment” and a committed partner in an exchange relationship is determined to remain in the relationship indefinitely and is willing to work towards maintaining the relationship (Morgan and Hunt, 1994). This definition has its roots in social exchange theories and links well with Hrebiniak (1974) who argues that relationships

characterised by trust are highly valued by the parties involved and as such they commit themselves to such relationships. As Morgan and Hunt (1994) correctly explain “because commitment entails vulnerability, parties will only seek trustworthy partners”. In this way, trust is therefore a key determinant of relationship commitment.

Batt (2003) explains that for an exchange partner to signal their trustworthiness and commitment to developing a long term relationship with the other party, relationship specific investments are crucial to facilitate embedding of trust in the exchange relationship. Such investments include physical or human assets that are dedicated to a particular business partner and whose redeployment entails considerable switching costs (Kwon and Suh, 2004). In exchange relationships involving market integrators and small scale farmers, the focus of this study, such investments could include provision of extension support to the growers by the integrators, provision of loans to the growers for purchasing of inputs and other required production technologies as well as establishment of infrastructure (such as cold chains) to facilitate improved efficiencies in the supply chain.

Morgan and Hunt (1994) contend that such idiosyncratic investments increase the related relationship termination costs. Termination costs refers to the expected losses arising from the termination of the exchange relationship and this leads to an ongoing relationship being viewed as important and in turn generating commitment to the relationship. As Kirsten and Sartorius (2002) argue, the anticipated high switching costs give rise to an exchange party’s interest to maintain a quality relationship with the exchange partner.

Dyer (1997) further argues that shared norms and values between the exchange partners are important to facilitate cultivation of commitment and trust to an exchange relationship. These norms and values refer to what are considered as “appropriate actions” and are based on the exchange partners world view, culture and interests. As Wilson and Moller (1995) explain “for as long as both partners see their goals being met by joint action they will be motivated to maintain the relationship”.

3.2 Trust and Farmers Cooperatives

Trust is widely held to be a “good thing” that can have positive impact on organisations in general including farmer’s cooperative organisations (Hansen et al, 2002). Several cooperatives reference trust as a guiding principle in their mission statements. Hansen et al (2002) however contend that it is important to have a good understanding “what exactly is good about the presence of trust in farmer’s cooperatives”. Several scholars (e.g. Hind 1998) argue that the presence of trust between members and between the members and cooperative management is an important predictor of group cohesion which is a measure of the strength of members desire to remain in a group (cooperative) and their commitment to it. Lasley et al., (1997) argues that trust lies at the heart of cooperation as without trust, people do not communicate which limits their chances for effective cooperation. An important ingredient in building trust among and between members and their cooperative organization is ethical business practices as situations “where high ethical standards exist, a foundation of trust is established that is essential for cooperative action to occur” (Lasley et al., 1997). As such when ethical behaviour is the norm, cooperative members are more likely to trust each other which, in turn, increases their levels of communication and commitment to building mutual cooperatives’ goals and mission. This, in turn, leads to greater cooperative action.

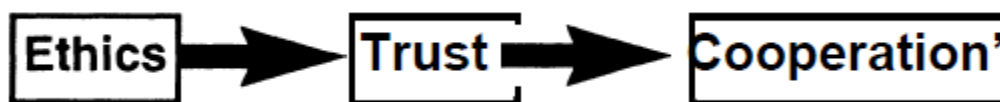


Figure 7: Ethics, Trust and Cooperation

Source Lasley et al., 1997

Neto and Bachmann (2016) argue that cooperatives experience different levels of trust between the members and the cooperative management depending on the cooperative development stage. As Hind (1999) explains, stage one and two of the cooperative life cycle have some distinct characteristics such as small profit, limited surplus and little interest in vertical integration. As cooperatives graduate into the third stage, they become more capital accumulative and develop a high interest in vertical integration. At this stage, surplus and profit is redistributed among members and becomes increasingly

important to fund new investments (Neto and Bachmann, 2016). During the fourth stage, cooperatives graduate into Farmer Controlled Businesses and become more profit driven with farmers interests aligned to this goal (Hind, 1999). During the fifth stage of development, cooperatives become Investor Oriented Firms which are purely profit driven and with determined profit maximizing objectives. Neto and Bachman (2016) conclude that in each stage of cooperative development (Table 13), different types of trust are experienced at different levels (Figure 8).

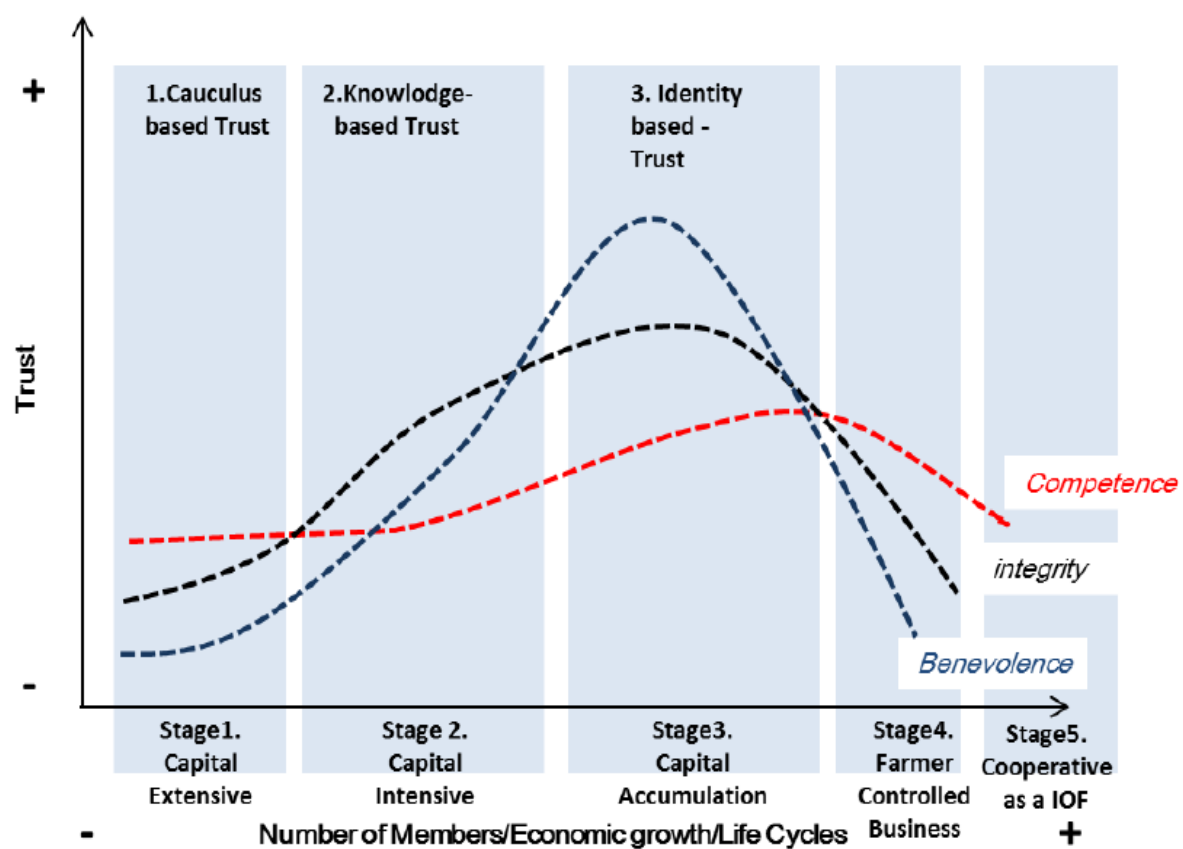


Figure 8: Composition of types of trust during cooperative life cycle stages

Source: Neto and Bachman (2016)

Table 13: Cooperative Development Stages and Key Characteristics

	Main Characteristics
Stage 1: Capital Extensive	<ul style="list-style-type: none"> • No or small profits • Management farmer centred • Low interest in vertical integration • Membership from few to several thousands
Stage 2: Capital Intensive	<ul style="list-style-type: none"> • No or small profits • Management in transition from farmer centred to staff centred • Low interest in vertical integration • Membership from few to several thousands
Stage 3: Capital Accumulative	<ul style="list-style-type: none"> • Profits and surplus are made – important sources of further business investment. • Management staff centred • Members from few to several thousands • Diversify agricultural production and marketing activities • High interest in vertical integration
Stage 4: Farmer Controlled Business	<ul style="list-style-type: none"> • Profits secured from business • Business partly profit driven but with farmer interests as a concern • Management staff centred • Tendency to be large in number of members including non members • Diversified agricultural production and marketing activities with possible complimentary non agricultural portfolio • High interest in vertical integration to improve market control
Stage 5: Investor Oriented Firm	<ul style="list-style-type: none"> • Profit driven business with a view to allocate reserves for assets • The growth of the business is the primary concern • Management –staff centred • No limitation on individuals in membership. • Diversified Agricultural no allegiance to any sector • High interest in vertical integration to improve market control and to increase profits

Adapted from Neto and Bachmann (2016) and Hind (1999)

Lasley et al., (1997) argue that members evaluate their cooperative in terms of prices paid or received, patronage refunds and the range and quality of services that they receive from the cooperative. While cooperatives have to effectively compete on the

market with other actors, it is important for their success that they build long term membership commitment and loyalty. Cooperatives however often experience ethical dilemmas particularly in pricing policies and practices, sales promotion and business illegalities such as bribery, insider trading, executive piracy, fraud, collusion, conflict of interest (including gifts or favours), personal financial interests, external affiliations and moonlighting (Lasley et al., 1997). These factors largely erode membership trust and confidence as they compromise the principle of mutual benefits which should be at the centre of agricultural cooperatives. The extent to which cooperatives are able to safeguard membership interests as their vertical integration increases in the value chain has also been a subject of immense debate. It is in this respect that Nilsson et al (2009) pose the question “Are agricultural cooperatives losing their social capital?”. They go on to conclude from their study findings that level of trust in cooperatives is diminishing as they become vertically integrated in supply chains as the cooperative decision makers often lack specific instruments for estimating how much social capital is lost when they pursue strategies of vertical and horizontal integration. As such the cooperative governance leaders do not consider this loss in their calculations.

3.3 Conclusion

This chapter has provided a theoretical framework demonstrating that trust is arguably a vital component of exchange relationships (Andrade and Castro, 2007). Trust is an important lubricant of a social system (Arrow, 1974) that binds exchange parties providing them with an important future orientation. The discussion provided in this chapter has attempted to outline the main theoretical arguments from various scholars (e.g. Morgan and Hunt, 1994; Kirsten and Sartorius, 2002; Batt, 2003; Kwon and Suh, 2004;) demonstrating that when trust is operative, the risk of opportunism between exchange partners is reduced. Furthermore, trust reduces the perception of risk associated with opportunistic behaviour by a partner therefore lowering the transactional costs linked to an exchange relationship (Morgan and Hunt, 1994).

A high degree of trust between exchange partners is conducive to coordinative behaviour (Anderson and Narus, 1990; Andrade and Castro, 2007) and encourages effective communication characterised by information sharing and joint payoffs (Ring and Van de Ven, 1992). Arguably, trust in an exchange relationship can reduce the transaction costs

of obtaining information about the contemporary market opportunities that could benefit small scale farmers in many developing countries. Given the widely accepted view that smallholder participation in agricultural value chains could contribute significantly towards poverty reduction (Markelova et al, 2007), trusting relationships between small scale farmers and their integrators conceptually could become an important vehicle to communicate to the growers opportunities offered by modern markets as well as the related requirements of contemporary supply chains.

The discussion in this chapter has also demonstrated the importance of trust in Farmers Cooperatives (to promote long term collective action). The dilemma facing cooperatives to balance membership interests (and hence entrench trust) and adopting strategies to enhance their market competitiveness has also been discussed. The decision by small scale farmers to adopt new crops, technologies and production systems demanded by modern markets, shifting away from the years of subsistence production, could thus be strongly dependant on trust. As the discussion in this chapter has shown, theoretical models demonstrate that the effect of switching costs on market behaviour could be considerable. For instance, consumers who have previously purchased from one firm incur and / or perceive costs of switching to a competitor's product. As Klemperer (1995) explains, these costs are consumer switching costs. Similarly, small scale farmers in developing countries, who, for years have relied on traditional crops as the backbone of their subsistence production, perceive costs of switching to a different way of farming involving different crops and technologies as demanded by modern value markets. These costs represent the producer switching costs. Given the reality that small scale farmers make decisions whether or not they should adopt a "new crop" or technology, trust based relations between the growers and their market integrators (including Farmers Cooperatives / Produce Marketing Organisations) are important. This can then ensure dissemination of relevant market information, extension and related business development services required to lower the (perceived) switching costs to the requirements of contemporary agribusiness value chains. Low trust between the smallholder growers and their market integrators is conceptualised as resulting in risk averse attitudes leading to inelastic responses by the growers to the opportunities presented by contemporary agribusiness markets.

Chapter 4: Description of the Research Study Location

This chapter provides discussion on supermarket growth in Zambia and the impact on Fresh Fruit and Vegetables commercialisation in the country. The chapter then provides specific information on Livingstone town - the research study location. The main agribusiness livelihood activities conducted in the area are discussed particularly horticultural production and marketing activities by small scale farmers. The chapter also presents a comparative review of livelihood strategies in the case study area and Kazangula (a neighbouring district) as well as Lusaka (one of the main hubs of commercial horticultural production and marketing in the country). This comparative review was conducted as part of the baseline profiling to understand the main opportunities and constraints that smallholder farmers in Zambia are confronted with relating to their inclusion in horticultural markets.

4.1 Supermarkets in Zambia

Over the last two decades, fresh produce supply chains in Zambia have been undergoing a process of transformation following the increase in the number and role of supermarkets¹² in fresh fruit and vegetables retail trade in the country. The supermarkets operating in Zambia can be categorised into two broad categories (a) multinational corporate chains and (b) local independent supermarket chains:

4.1.1 Multinational Corporate Supermarkets Chains:

These supermarkets are usually very large stores with strong financial capital – in the majority of cases foreign investments. They are often located in centres of higher population and in affluent suburbs and operate as part of corporate chains implementing modern information technologies and management techniques including a preference for procurement systems of fresh produce seeking to source directly from selected farmers and under specified standards rather than a reliance on traditional wholesale markets. The produce sold in these supermarkets is usually pre-packed, refrigerated and sold on

¹² This study adopts the definition of a supermarket as “a self-service store handling predominantly food and drug fast moving consumer goods with at least 150 square metres of floor space” (Hichaambwa and Tschirley, 2006).

the basis of prices quoted per kilogram (kg). The main vegetables sold are tomato, cabbage, onions and Irish potatoes as well as a wide array of other exotic Fresh Fruit and Vegetables (FFV) preferred by high income groups.

4.1.2 Local independent supermarket chains:

These supermarkets are mainly locally owned and operated stores, trading independently or as part of a small group of supermarkets (at most three). In Lusaka, these supermarkets are normally located in high income residential areas (e.g. Kabulonga and Northmead) and are patronised by the residents of these areas. Mostly sell tomato, cabbage, onions and other fresh fruit and vegetables required by high income groups (e.g. broccoli, cauliflower, spinach, carrots, apples, oranges etc). The high volume traditional FFV commodities are normally sourced from wholesale markets while the speciality produce is sourced through direct procurement arrangements with selected farmers.

In a number of countries, the rapid rise of supermarkets has been linked to urbanisation, increasing incomes and the rise of the middle class, the trend in Zambia however presents a different scenario as the growth of the supermarket stores is neither linked to increased urbanisation nor the growth of the middle class (Mwiinga, 2009). The economic stagnation that the country experienced in the 1980s and the 1990s slowed down the pace of urbanisation and there are views presented by some scholars that some towns in the Copperbelt region for instance actually experienced de-urbanisation (see Kodamaya, 2011). The decreasing urban population trend during this period has also been attributed to investments in the mining sector which resulted in population movements to rural mining areas in search of employment opportunities (Kodamaya, 2011). However, since the start of the 2000s, the urbanisation process has resumed and Zambia is again becoming increasingly urban. Despite the steady increases in the urban population witnessed in the recent years, scholars such as Mwiinga (2009) argue that the growth in supermarket activities in Zambia should be attributed more to “market oriented policies which have since restored fiscal and monetary discipline and opening up a substantial inflow of direct foreign investment up to the remote parts of the country”. For instance, between 1992 and 1995, the Zambian government decontrolled the foreign exchange market introducing a market determined exchange rate and convertible local currency. Restrictions on bank lending and deposits rates were also eliminated including export and import restrictions and licensing. In the agricultural sector specifically, the Zambian

Government withdrew from marketing of agricultural inputs and price supports taking away the previous state monopoly that had been entrenched through the Grain Marketing Boards. These market reforms have presented a conducive economic climate attracting substantial direct foreign investments, often however into the larger farms and agri-food sector. Zambia has therefore in recent years become a favoured investment destination particularly by South African retail supermarkets (e.g. Shoprite, Spar and lately Pick and Pay). These South African retail giants' expansion into Zambia (as in other countries within the region) has also enjoyed a competitive advantage arising from the expertise that they have developed over several years trading in Africa. These supermarket chains are familiar with the physical, regulatory and social terrain within the region compared to businesses from other parts of the world.

The main retail supermarkets operating in Zambia and a brief overview of their procurement strategies for Fresh Fruit and Vegetables are provided below:

4.1.3 Shoprite Supermarkets:

Shoprite has taken full advantage of the investment climate and has since 1997 established 18 stores throughout the country. It is the dominant chain in Zambia and one of the biggest South African investors in the country. The first store was opened in Lusaka in 1995 and now each of their 18 stores has floor space of about 2 000m² and total retail sales of about US\$ 30 million. Shoprite Zambia is a subsidiary of Shoprite South Africa and the stores are built on a similar concept to those in South Africa. The stores are large supermarkets with fresh food counters and an in-store bakery. Each of the stores has distinct characteristics and unique selling points. As an example, Shoprite on Cairo Road in Lusaka caters mainly for customers on foot (mainly urban working people and also poorer customers), whereas Shoprite Manda Hill targets the upper-middle class and the elite. The Manda Hill shopping centre, which was opened on the 28th of October 1999, is one of the largest shopping centres in the country with an area of 22 260 m². The centre is visited by an average of 400 000 shoppers monthly and boasts of ample parking space for motor vehicles. Freshmark (the fresh produce procurement arm of Shoprite) has two main depots in Lusaka and Kitwe. The Lusaka depot is designed to cover distribution to stores mainly in Southern, Lusaka, Western and Eastern provinces, while the Kitwe Depot covers North-Western, Copperbelt, Luapula and Northern Province Stores. Freshmark

mainly imports apples, bananas and citrus fruit from South Africa. 97% of tomato, cabbage, rape, onions and potatoes are sourced locally with 45% of the vegetables bought by Freshmark produced by smallholder growers.

4.1.4 Mellisa Supermarkets

Melissa supermarket is a Zambian supermarket chain with three outlets in Lusaka city located in Northmead, Kabulonga and Matero. Melissa has an internal procurement system for Fresh Fruit and Vegetable produce through contractual arrangements mainly with commercial farmers operating in the country. In addition to procuring FFV from commercial farms, Melissa also obtains some produce from small independent farmers who are basically walk-in suppliers without contracts with Melissa but meet the produce standards required by the supermarket chain. Through this dual procurement system, the supermarket chain is able to secure a continuous supply of required Fresh Fruit and Vegetable produce throughout the year.

4.1.5 Spar Supermarket

Spar Zambia is a franchise that started operations in December 2003. It is still a fairly small operation but has plans to increase the number of stores in the country. Each of the Spar outlets is run as an independent operation by its own manager, and each with its own FFV procurement system and pricing policy.

4.1.6 Pick and Pay

The 1st Pick and Pay store was opened in Woodlands suburb, Lusaka in July 2010 and in March 2011, the Zambian President officiated the opening of the 2nd store in Ndola. Pick and Pay invested over \$3.5 million US in the 2nd store which is 800m² bigger than the first store. As part of its intention to support local farmers and suppliers while assisting economic growth in Zambia, Pick n Pay made a commitment to the Zambian government that fifty per cent of its turnover would come from local suppliers (Pick and Pay, 2011). Pick n Pay's Fresh Produce division is currently developing local growers with the view of not only supplying Pick n Pay stores in Zambia but also for possible export to surrounding countries such as Zimbabwe, South Africa and Botswana.

Supermarket expansion in Zambia has also been attributed to the existence of a meaningful commercial farm sector in the country which has facilitated the produce

supply base to be able to respond to the growing supermarket requirements (Tschirley et al, 2010). Other factors that have influenced supermarket growth in other parts of the world were reviewed by Shepard (2005) and his perspectives are presented (Box 2).

Box 2: Factors for supermarket growth

Shepherd (2005) provides an interesting perspective to explain the increasing role and rise of supermarkets in food retailing across the world. These factors which are all applicable to the Zambian situation are listed:

- ✓ The increasing employment of women, with a consequent increase in the opportunity cost of their time. Families are said to be “cash rich, time poor” and this has led to a demand for meals that are easier to prepare and for retail outlets that offer a wider range of prepared products or a one stop shop.
- ✓ “Westernization” of lifestyles, particularly among younger people including diet, leisure time and clothing;
- ✓ Demographic trends, with an increasing proportion of young people;
- ✓ Growing use of credit cards, which in Zambia are not accepted by corner shops or traditional wet markets;
- ✓ Changes in family structure resulting in a growing proportion of nuclear families and, even, one-person households, as opposed to extended families;
- ✓ Reduction of effective food prices for consumers because of supermarkets’ greater ability to control costs through economies of scale, improved logistics, etc. This may not, however, always apply to fresh produce;
- ✓ Growing access to refrigerators, allowing larger quantities of food to be stored, and to cars, allowing shopping to be done away from the immediate vicinity of the home and for larger quantities to be purchased at any one time;

The expansion of South African supermarket chain in Zambia has not been without controversy. As Abrahams (2010) explains there has been increasing hostility towards South African firms, particularly supermarkets and agribusiness firms particularly rooted from issues of both foreign ownership and labour. Indeed, as Abrahams (2010) further explains, this hostility against South African owned supermarkets in the country has often

taken the form of protests outside stores and scathing press campaigns. Shoprite, for example, previously generated intense negative publicity because of its policies that favour South African employees in management positions in its Zambian outlets (Miller, 2004, 2005). In addition, antagonism towards the conglomerate has also been directed at sourcing and procurement practices that are partial to South African – not Zambian – suppliers, even when produce is available in the country (Abrahams, 2010). In some cases, agricultural unions in Lusaka have also accused Shoprite of actively excluding local farmers from supply chains often under the guise that the local farmers did not meet the quality specifications, volume and consistency of supply required by the company (ibid). In an attempt to respond to this criticism, Shoprite has been at pains to demonstrate examples of its local investment: it has pointed to upgrading assistance provided to the Zambian milk and chicken processing industries, and asserted its commitment to local sourcing by arranging large publicity events through Freshmark, Shoprite's fresh produce procurement wing (Abrahams, 2010). The hostility towards supermarkets, more generally, and escalating incidents of civic and legal contestation of supermarket practices in Africa are surprising given the favourable treatment of supermarkets, and the transformation they generate, in much of the academic literature (ibid).

Despite the inroads that supermarkets have made into the Zambian domestic market, this growth needs to be examined with caution particularly in relation to the FFV sector. Indeed, Zambia reflects the Asian experience (Shepherd, 2005), where many households continue to use traditional retailers for fruits and vegetables even though they may use supermarkets for other products. It is interesting to note that, despite their expansion in Zambia, modern retail supermarket chains account for only 10% of the horticultural produce market share. Nearly 90% of all fresh fruit and vegetables marketed in Lusaka flows through traditional informal retail channels (Food Security Research Project, 2006, Agwater Solutions, 2011). The informal system, which is comprised of open air markets and the “ka sector”,¹³ dominates retail activities in the country for fresh fruit and vegetables.

¹³The “ka sector” refers to the informal retail outlets for FFV and these include market stands, market stall vendors, mobile vendors, street vendors, ka table (small table stall), kantemba (small rudimentary shop) and ka shop (kiosk) (Mwinga, 2009).

Abrahams (2010) estimated that for crops such as tomatoes and potatoes, over 75% are still marketed through traditional market channels (e.g. farm gate, street vendors, traditional wholesale markets and other local markets). As such, the traditional market outlets remain as the dominant and the most significant channel responsible for Fresh Fruit and Vegetable commercialisation in Zambia. The main setback in traditional wholesale markets is that grades and standards are hardly used and these markets are prone to price fluctuations as a result of fresh produce flooding the market (Abrahams, 2010). Hichaambwa et al (2006). Indeed, for most Zambians, there remains the perception, and possibly the reality that open air wet market supplies of fruit and vegetable produce are fresher and often cheaper. Unless a consumer happens to live close to a supermarket, wet markets are also more convenient for most Zambian consumers accustomed to walking to make daily purchases of fruits and vegetables. At the same time, other consumers in the country also perceive supermarkets as often lacking a sufficient range of horticultural produce to encourage them to switch from wet markets, particularly outside of the major cities.

As such, although supermarkets in Zambia continue to make inroads in terms of increasing their market share for FFV because of their competitive prices, reliability, arguably better quality produce (due to the strict regime of production and marketing standards) and the fact that they offer “one-stop” shopping for more than just food, the extent and speed of related changes in FFV retailing in the country however should not be overestimated. The market trends in Zambia indicate that the rate of growth by the supermarkets has not been fast enough to change the relative importance of traditional fresh produce markets in the country and these trends are unlikely to change rapidly (Tschirley et al, 2010). Recognising the persistent continued strengths of wet markets in Zambia, there are increasingly more cautious voices of the early expectations of rapid supermarket takeover particularly in the fresh fruit and vegetable supply chains (see for instance Tschirley et al, 2010; Mataa and Hichaambwa, 2006).

4.2 Description of the Study Area

The population in Zambia in 2015 is estimated to have been 16,211.767 and the country's Gross Domestic Product is pegged at US\$21.15 billion (World Bank, 2017). According to the United Nations data on Zambia, 40.9% of the country's population are in urban areas taking note of the 4.3% average annual urban population growth rate recorded during the period 2010 – 2015 (United Nations, 2017). The population in the Southern province according to the last country census conducted in 2010 was 1,606.763 people (Government of Zambia, Central Statistics Office, 2011); of these 49% and 51% were male and female respectively (United Nations, 2017). 12% of the country's population. The average annual population growth rate for the province over the intercensal period 2000 – 2010 was 2.9 percent (Government of Zambia, Central Statistics Office, 2011).

Table 14: Southern province population size and distribution by sex, 1990 – 2010

	1990	2000	2010
Male	474,488	601,440	786,394
Female	491,103	610,684	820,399
Total	965,591	1,212,124	1,606,793

Source: (Government of Zambia, Central Statistics Office, 2011)

The Southern province has a total of 11 administrative districts. This study was conducted in Livingstone district (Figure 9) which is located three hundred and seventy four kilometres (KMs) south west of Lusaka, the capital of Zambia. According to the last census in 2010, Livingstone district had a total population of 142,034 representing approximately 9% of the total population in the southern province (Government of Zambia, Central Statistics Office, 2011).

Livingstone lies between latitude 17.9 degrees south and longitude 25.9 degrees east and shares a boarder with the Victoria Falls town of Zimbabwe on the southern bank of the Zambezi River. The river forms a natural boundary between Zambia and Zimbabwe. The district is at an altitude of 986 metres above sea level and covers a surface area of 1,427

square kilometres. The district lies in a valley which borders the Batoka plateau in the north with an average height of 1000 – 4000 metres above sea level.

The district benefits from the Zambezi river which flows from the Kaleni hills in the north – western province of Zambia to the Indian ocean. The Zambezi river has two main tributaries in Livingstone namely the Malaba and Nansanzu rivers. In addition, numerous small streams flow southwards into the Zambezi. Many villages cluster along these streams for an easy source of water.

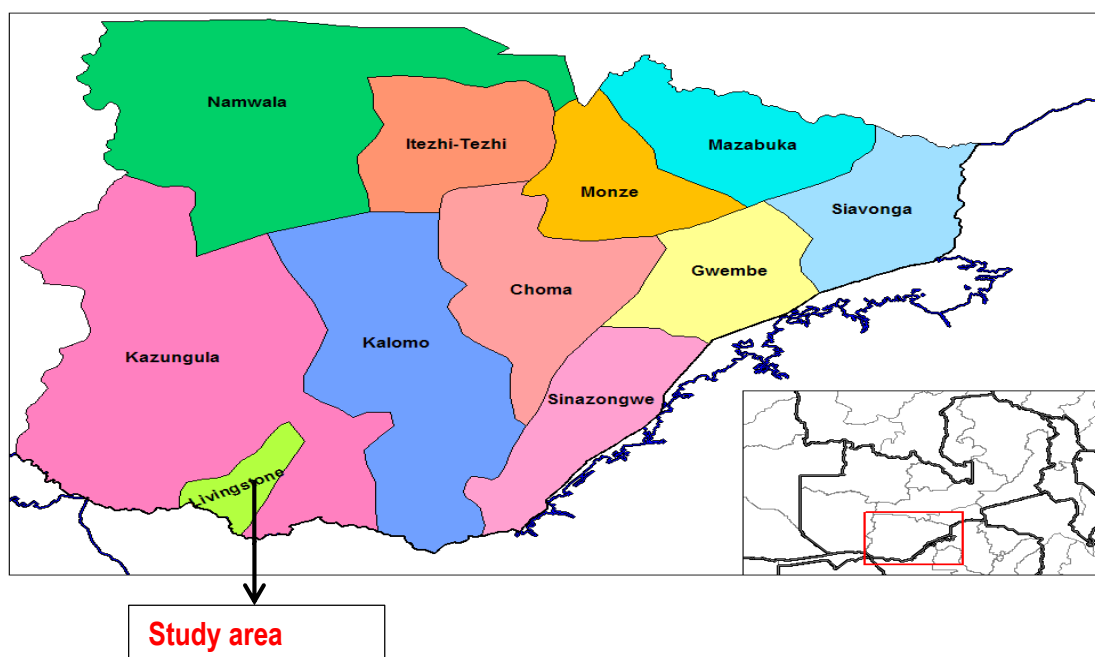


Figure 9: Map of study location

Livingstone town was established in 1905 following the construction of the bridge over the Zambezi River at the Victoria Falls (Figure 10). The town served as the administrative capital of North – Western Rhodesia from 1907 to 1910 (Moonga, 1999). In 1911 after the amalgamation of the North – Western Rhodesia and North – Eastern Rhodesia, Livingstone became the first capital of northern Rhodesia (now Zambia) until 1935 when the capital was moved to Lusaka.



Figure 10: The Victoria Falls Bridge

Source: Zambian Ministry of Tourism and Arts (2013)

Today, Livingstone town remains the provincial capital of the southern province and the gateway into Zambia from the south linked to Lusaka by rail, road and air. The district was initially known as Mukuni by the Leya people of Chief Mukuni who were the earliest native inhabitants of the area (Moonga, 1999). The colonial government however renamed the district Livingstone in honour of the Scottish missionary Dr. David Livingstone, the first white person to see (or to be shown) the Victoria Falls in 1885 (Moonga, 1999). Livingstone initially was the home of the Leya people of the Tonga ethnic group; however, with colonialism and the urbanisation from the first half of the 19th century, the area has attracted various ethnic groups from within Zambia who have relocated to work in the emergent industries and government departments. Today, although all the ethnic groups of Zambia are represented in the district, the common languages spoken in the area are Tonga and Lozi. The major population communities in the district include Chief Mukuni's village to the south east of Livingstone town and Chief Musokotwane and Sekute's villages to the west of Livingstone town.

The coming of the railway in 1904 from the south (Bulawayo) stimulated the growth of the curio industry among the Leya and their neighbouring Lozi (Moonga, 1999). At this time, the Leya people had been integrated into the capitalist money economy necessitating the production of surplus to earn money for purchasing provisions such as clothes, blankets and pots. Previously, during the pre-colonial era, curio making was conducted as a pastime and often given as gifts (Moonga, 1999). The establishment of the railways and the subsequent advent of tourists to the Victoria Falls commercialised the

curio industry and to this day, curio production and marketing continues to play a major role in the Leya's economic life.

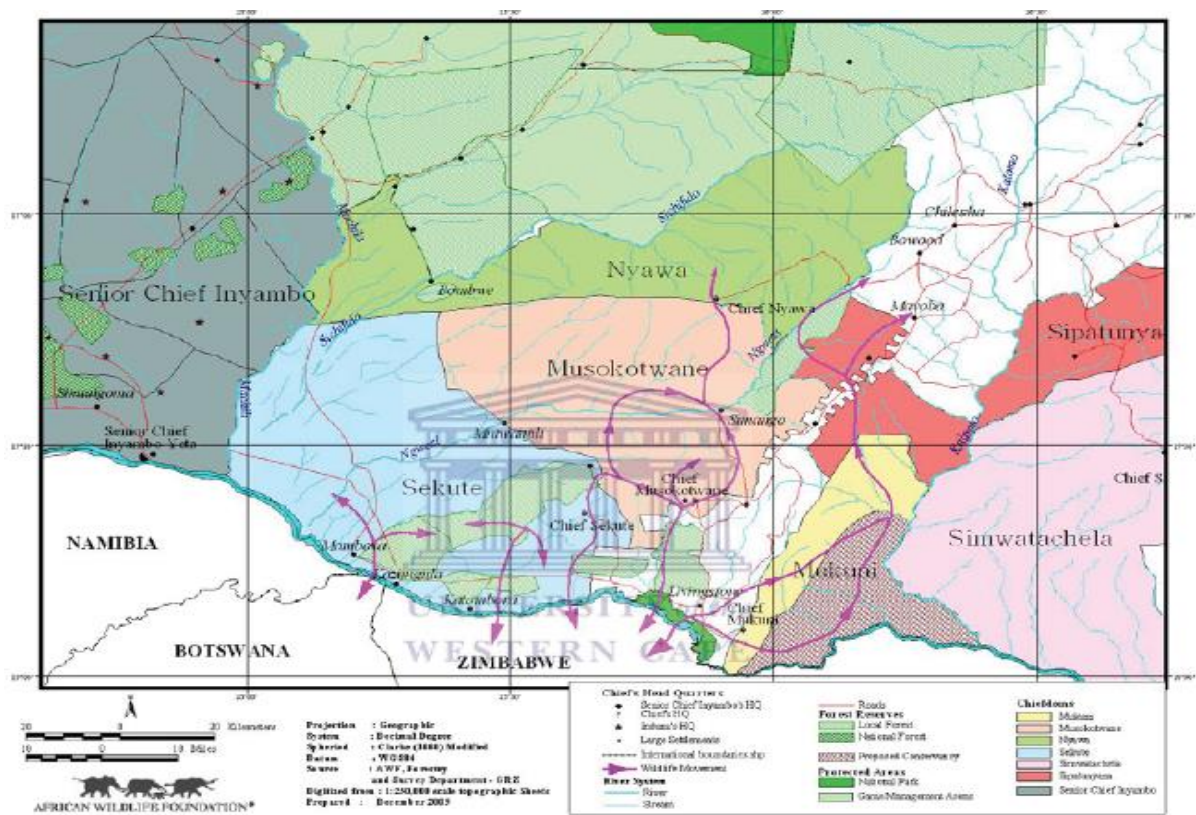


Figure 11: Chieftaincies around Livingstone area of Zambia

Source: Metcalfe (2006).

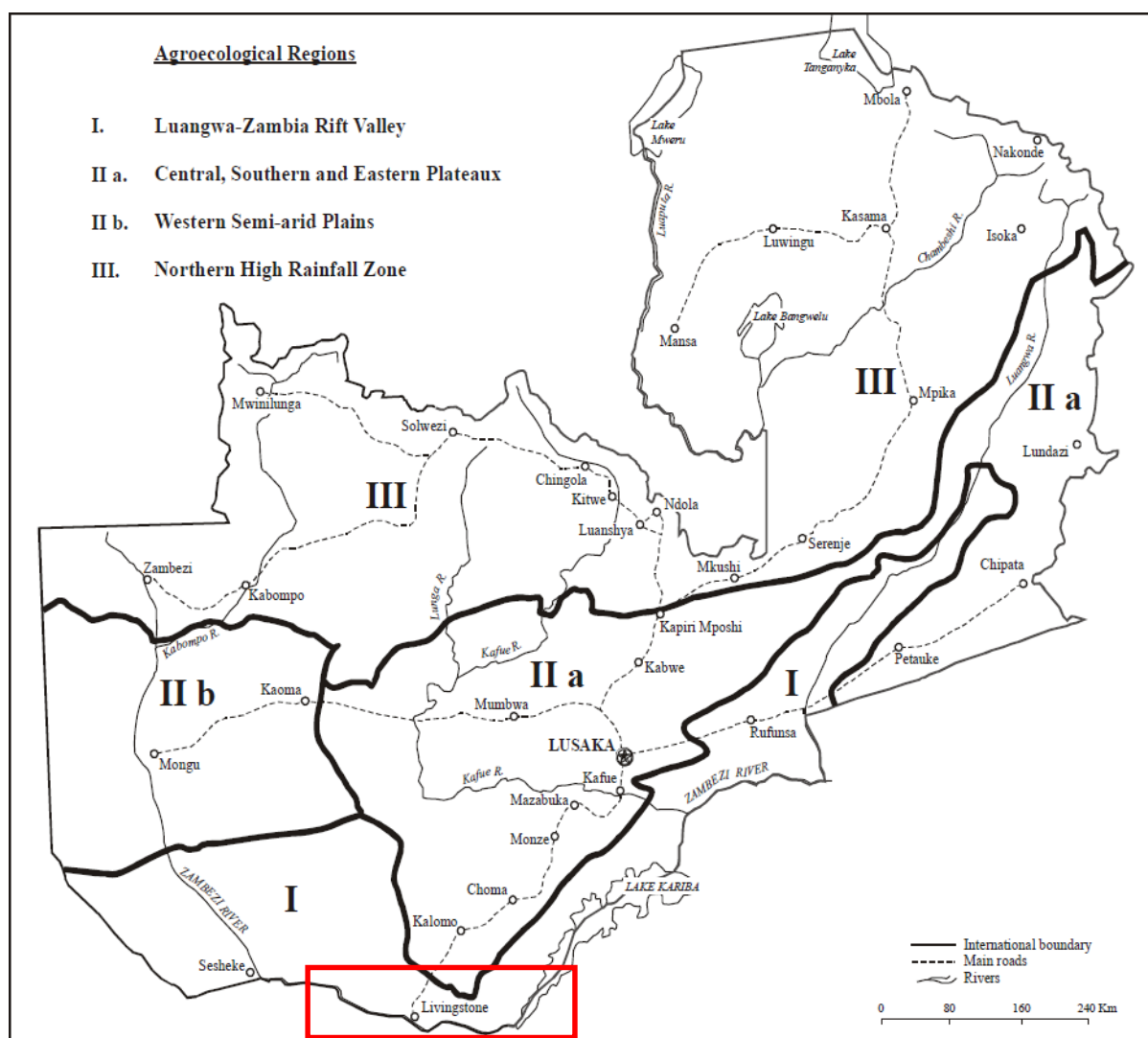
The density of wild animals in the area has proven also to be one of the main tourist attractions to Livingstone. Many species of wildlife are found in the district particularly in the area surrounding the Victoria Falls. Owing to the rich wildlife in the area, the colonial government in 1906 established a national park, the forerunner of the Mosi-oa-Tunya National Park, located between the old drift on the south west and the main Mosi-oa-Tunya road to the Victoria Falls (Moonga, 1999). The Mosi-oa-Tunya national park is home to a variety of wildlife and spreads over an area of 66,000 square kilometres. The park provides one of the main tourist attractions to Livingstone as approximately 88% of international visitors that arrive in Zambia are nature tourists seeking to enjoy the country's tranquil scenery as well as participate in wildlife viewing and adventure activities such as rafting and canoeing (Fernandez, 2010). The tourism sector has been

prioritized by the Government of Zambia as one of the growth areas of the economy due to its potential as a foreign currency earner and contributor to socio-economic development. The Zambian Government has targeted tourism, together with energy, agriculture and manufacturing sectors to account for 50% of Zambia's foreign currency earnings by 2030 (Mwansa Stephen, 2015). Currently, these sectors account for 30% foreign currency earnings, with mining accounting for 70% (Mwansa Stephen, 2015). Furthermore, the tourism industry has been identified as a growth sector due to its labour-intensive nature and as such an important source of jobs. Indeed, the tourism industry also provides numerous backward and forward linkages to other sectors of the economy, both economic and service including opportunities for smallholder farmers to supply fresh produce (Mwansa Stephen, 2015).

4.2.1 Horticultural Production in Livingstone

Zambia has three major agro-ecological zones (Figure 14). Livingstone district, the study location, falls within zone 1 which is a low rainfall area and one of Zambia's hottest, driest and poorest regions. The rainfall ranges from 600 – 800mm and the soils are mostly shallow, sandy and fertility is poor (Nenguwo, 2004, Siegel, 2008). In other words, this area is not conducive to high value horticulture unless there is adequate access to water, nutrient inputs and technology.

The coolest months are June and July when temperatures range from a minimum of about 6 °C and maximum of about 25 °C. Frosts do occur although the incidence is not high with about 4 days per year when there is likelihood of frost. The warmest months are September and October (just before the start of the rainfall season) when the mean maximum temperatures rises to about 32 – 34 °C. The farming systems in place in the district are predominantly small scale crop and livestock production with maize, sorghum and millet as the main staple crops during the wet season. Livestock are reared with cattle as the major interest but also including other livestock such as goats, chickens and pigs. Over 90% of smallholder farmers in the district engage in rain fed crop production (Siegel, 2008) and as such rainfall is a critical factor for selecting crops to grow, their planting time and intensity of inputs. Yield fluctuations from unpredictable rainfall are a major risk to the smallholder farmers in the district and this is predicted to become more problematic if future climate change scenarios come to fruition.



Source: Siegel (2008)

Despite the drier conditions in the district, maize remains the crop of choice for most smallholder farmers in the district (Siegel, 2008). Maize is the staple crop in Zambia and is thought to be more palatable, more nutritious and easier to process. Most small scale farmers in the district are familiar with maize cultivation and the versatility of the crop presents it as a safer choice for the risk averse poor. It is a subsistence crop, a cash crop and a safety net. Although produced primarily for own consumption, maize surpluses can be sold as a cash crop or if an acceptable market price is not secured, the crop can be stored and consumed during the lean periods. In addition it produces fodder for livestock

and can be either eaten early in the season (green) or as mature stova (dry). Other crops offer few of these advantages. For example, markets for sorghum, cassava and millet are smaller and unpredictable.

The small scale farmers in the district engage in horticulture production primarily for home consumption but also produce a surplus for sale within their communities. There is also the opportunity to sell to higher value markets such as supermarkets and tourist establishments located in Livingstone town. The main cropping season for horticultural crops is from late March when the rains begin to decrease and field crops start to mature. Sowing continues until June for most households when reduced water availability curtails the season. For the farmers with access to irrigation water, production continues for much longer and usually until October / November when focus is again shifted to planting field subsistence crops at the start of a new wet season.

Of all the Fresh Fruit and Vegetables (FFV) produced by the small scale farmers, 6 crops (tomato, rape, cabbage, water melon, eggplant and onion) dominate smallholder production systems in Zambia accounting for at least 86% of the total value of FFV sales (Sitko et al, 2011). Most of the seed used by small scale farmers is recycled or imported as Quality Declared Seed (QDS). QDS is cheaper and thus attractive to importers but the quality is generally poor (Sitko et al, 2011, Nenguwo, 2004). In addition the conditions related to the distribution, storage, and retail of the seed are not standardized, therefore further compromising seed quality. Unlike maize, legislation does not allow for detailed inspection throughout the distribution chain and hence seed mixtures and contamination are common and the farmers are not adequately protected. It is in this respect that Siegel (2008) recommends that authorities in Zambia should enforce sanitary regulations in the production and distribution of horticultural seed particularly to prevent diseases and contamination during distribution.

4.3 Farmers production and marketing strategies

This section provides the main horticultural production and marketing strategies that are employed by small scale farmers in the southern province (Livingstone and Kazangula districts) with a comparison to small holder farmers around Lusaka. This part of the research study was conducted as part of context review and baseline study and as a

precursor to the main research results presented in Chapter 5 that evaluates a cooperative managed Produce Marketing Organisation and explores the importance of trust in smallholder farmer's inclusion in a specific horticultural value chain.

A case study approach was employed due to the qualitative nature of the data in addition to the added ability to explore a wider range of variables that affect the structure and performance of small scale farmers' horticultural production and marketing operations. The study focussed on three locations (Livingstone and Kazangula districts, both in the southern province of Zambia and Lusaka district). Research data was collected in all the three locations following a two stage approach; face to face interviews with individual farmers and focus group discussions. A total of 94 households were sampled in these locations using proportional representation techniques and an additional 6 Focus Group Discussions were conducted. The 94 respondents sampled under the study were randomly selected from community farmer's database that was secured from the International Development Enterprises (IDE)¹⁴ - a Non Governmental Organisation which supports agribusiness enterprise development for smallholder farmers. All respondents were requested to answer a set of structured questions and were given the opportunity to consult with other household members where required. The responses from the face to face interviews¹⁵ were then reviewed to identify pertinent issues relating to farmers horticultural production and marketing activities. These issues were then presented and discussed during follow up Focus Group Discussions¹⁶. The focus groups comprised of farmers in the area including those who were interviewed and those who were not; discussions with farmers allowed them to elaborate on the main issues that emerged during individual face to face interviews. These group discussions were convened through IDE field officers who work in the communities with support from the lead farmers and other community leaders.

Although the data collected is largely of a qualitative nature, certain quantitative data was also assembled to assess a variety of variables including farmers' experience of growing

¹⁴ IDE works in the three districts and maintains a register of all the farmers supported by their programmes

¹⁵Annex 1 provides the questionnaire that was used for the data collection during this survey.

¹⁶Annex 2 highlights the Focus Group Discussion Guide that was used for the study baseline survey

assorted high value horticultural produce, access to land, water and irrigation technologies. Furthermore the farmers' understanding of food safety and quality standards was also assessed.

Additional activities were also conducted within this research study to facilitate the full engagement of different stakeholders at different levels and to generate a holistic understanding of the horticulture industry in Zambia (Table 15).

Table 15: Baseline study activities

Activity	Participants	Purpose
Consultative Planning Meeting	IDE Zambia Country Management Team including the Agronomist and Marketing Manager RAC – Lead Researcher	Ensure all team members have an accurate understanding of the research objectives and to identify communities with potential for horticultural production and marketing to high value supply chains.
Key Informant Interviews	District Agricultural Coordinator – Livingstone / Kazangula & National Horticulture Program Officer	To secure government policy position on the horticulture industry and the support programmes available to facilitate small scale farmers inclusion in high value supply chains.
	Various Non-Governmental Organisations	Identify on-going projects supporting small scale farmers inclusion in value horticultural supply chains
	Four main supermarkets in Zambia (Shoprite, Pick and Pay, Spar and Mellissa)	To secure an overview of the produce procurement models that are used by these supermarkets and identify the main constraints / opportunities for integration of small scale farmers within their supply chains.
Visits to the fresh produce open markets	Food Security Research Project Officer, IDE and RAC Lead Researcher	Secure understanding how these markets are organised and the opportunities and constraints for small scale commercial farmers

4.4 Baseline Study Results

The discussion below provides the main results and observations made by the baseline study:

4.4.1 Access to water and irrigation for production activities

Fundamental to horticultural production is the availability of water and, as the rainfall pattern in both Lusaka and the southern provinces can be very variable, this affects the volume of water available for smallholder irrigation activities. The small scale farmers interviewed indicated that they relied on a variety of sources for water for the production of their horticultural crops. In Livingstone and Kazangula, 44% of the interviewed households have access to streams and 45% to rivers particularly the Zambezi. In the majority of cases, these farmers indicated that these water sources provide adequate water for irrigation of their vegetable crops all year round. The remaining 11% indicated that they utilised borehole water; however, these respondents were concentrated in Nsongwe community being members of a women's association for vegetable production that had received support to install a borehole from Africare, an American charity.



Figure 13: Nsongwe Association billboard at the entrance of the vegetable garden

In Lusaka, 67% and 33% of the respondents accessed water from streams and shallow wells respectively.

Although all the sampled households in Livingstone / Kazangula and Lusaka indicated they had access to a water source for irrigation of their vegetable crops, access to irrigation technologies was identified as the key constraint faced by the study respondents:

Of the smallholders in the southern province (Kazangula and Livingstone) 42% of the research sample rely on buckets / watering cans to irrigate their vegetable plots; in Lusaka, 38% also rely on buckets to water their vegetable plots (Figure 16). A further 23% of the sampled farmers in Livingstone / Kazangula rely on treadle pumps compared to 15% in Lusaka. Finally, more farmers in Lusaka have acquired motorised pumps compared to Livingstone / Kazangula (47% and 35% respectively).

Irrigating vegetable plots manually using buckets / watering cans is intensive manual work and particularly difficult for the elderly and women members of the community. Furthermore, the efficiency of operation using buckets may not always be efficiently carried out, as growers may over irrigate during cool periods and under irrigate during the hot periods.

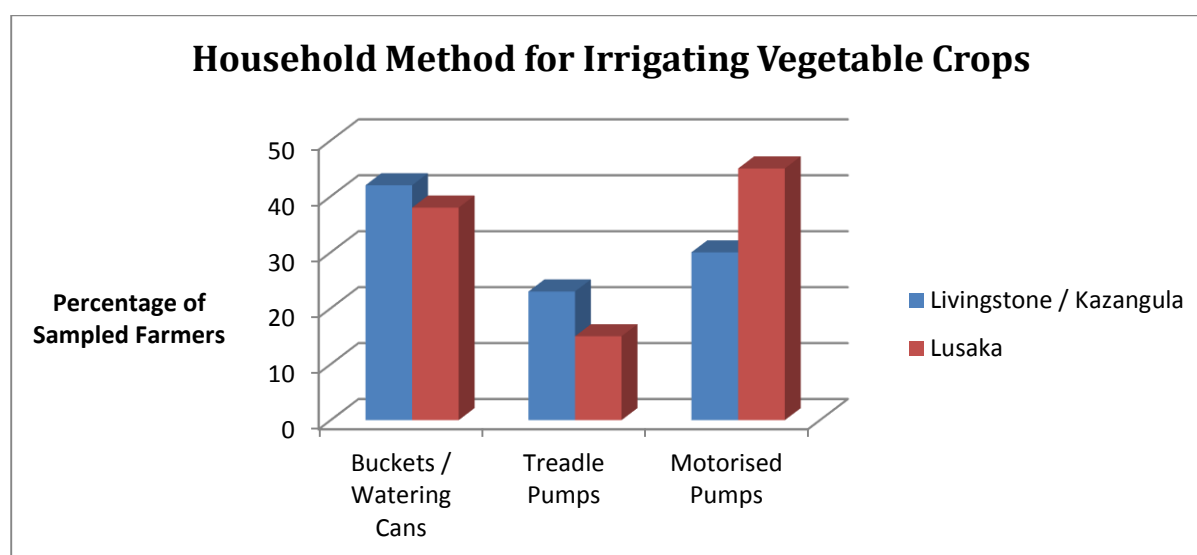


Figure 14: Household methods of watering vegetable plots.

Source: Baseline Study (Lusaka n=30, Livingstone/Kazangula n=64)

Of all the communities that were sampled in the southern province, Jack Mwanampampa community has the highest number of households that has access to irrigation technologies where 67% utilise motorised pumps, 22% utilise treadle pumps while only 11% rely on watering cans / buckets to irrigate their vegetable gardens. It is also interesting to note that the households that utilise motorised pumps to irrigate their vegetable plots had mainly purchased the equipment using own income derived from vegetable sales. The success of the farmers in Jack Mwanampampa was attributed to their proximity to Livingstone town (10kms) which facilitates their increased opportunities to access market information (see later) and reduced transaction costs particularly relating to transport costs linked to purchase of required inputs and taking produce to the market. As such, this group was included in the main study. It is also reasonable to argue that the higher level of motorised pump use in Lusaka may be related to the previously successful vegetable export period under Agriflora, a private sector company which engaged smallholder farmers as outgrowers to produce assorted fresh horticultural produce for export mainly to Europe.

Mambova and Katombora in the southern province (two of the furthest sampled communities, 80km and 65km respectively away from Livingstone town) had the greatest number of households that relied on buckets / watering cans to irrigate their vegetable plots. These two communities collectively accounted for 61% of the households that utilised buckets for irrigation in the 8 sampled communities in Kazangula and Livingstone. Most of the households interviewed in these two communities indicated that they were too far away from the main vegetable markets in Livingstone town. The related that transport costs for taking their produce to the market reduced significantly their profit margins thus reducing their capacity to invest in infrastructure and equipment required to expand their vegetable production activities.

The study determined in all the sampled locations that small scale farmers consider the treadle pump as an entry level technology for farmers who are not in a position to afford to rent or purchase a motorised pump. Of the 67% motorised pump users in Jack Mwanampampa in Livingstone, 42% indicated they had actually started vegetable production activities using a treadle pump. As their vegetable production and marketing activities expanded and became more profitable they purchased the motorised pumps to

increase the size of land that they could irrigate. Although it was apparent that a motorised pump is the farmers irrigation technology of choice (because it requires no manual effort and also because it covers a wider production area), 54% of the farmers interviewed in Lusaka raised concern not only of the cost of fuel but also the frequent petrol shortages reported to be experienced each year (mainly from September - November). During this period, these farmers indicated that they often utilised their treadle pumps as a back-up to facilitate irrigation of their crops during periods when fuel would be in short supply.



Figure 15: Drip irrigation in one of the vegetable gardens

Note: No mulch being used which would reduce evaporation and keep the soil cooler

Agronomic practices to improve water use efficiency were identified to be weak in all the sampled locations but some drip irrigation was used (Figure 15). However, there is need to consider soil and water management practices including for example the use of mulches particularly given that this practice has capacity to reduce the farmers water application rates and reduce plant stress from hot soils. Field visits conducted to all the communities in Lusaka, Livingstone and Kazangula did not reveal the use of mulches as a regular agronomic practice.

4.4.2 Food Safety and Quality Standards

The characteristics of high value domestic, regional and international markets call for very high standards including produce quality, consistency of supply, traceability, food

safety, and third party certified standards e.g. GlobalGAP and/or Fair-trade (where small farmer support is promoted to consumers)). The sampled farmers (particularly in Lusaka) have a general awareness about food safety and quality standards and acknowledge the related importance of ensuring that their farming systems comply with these standards for them to be able to participate in high value horticultural markets (Figure 16).



Figure 16: Farmers understanding of food safety and quality standards

Source: Baseline study (Lusaka n=30, Livingstone/Kazangula n=64)

In the sampled communities in Lusaka, 81% of the study respondents confirmed that they had heard about food safety and quality standards in general; this was likely linked to the previous export business that operated around Lusaka. In Livingstone and Kazangula 51% of the sampled farmers also confirmed general awareness of these standards. Most of the sampled farmers advised they had heard about these standards informally through their market agents, other farmers, extension officers from the ministry of agriculture, NGOs and the private sector (particularly hotels and some supermarket agents) The study results however indicate that only 28% and 29% of the sampled farmers in Livingstone / Kazangula and Lusaka respectively had received structured training to

explain the requirements of these standards and how the farmers can adapt their production and marketing strategies to ensure compliance.

The lack of clear understanding on food safety and quality standards was easily noted during focus group discussions and household interviews as some farmers perceived these standards to relate exclusively for instance to organic and / or conservation farming practices. In Livingstone / Kazangula, a significant proportion of the sampled farmers perceived food safety and quality standards to imply exclusively to the need for reduced chemical and fertiliser applications during horticultural production activities as opposed to the more accepted major microbiological challenges recognised in most produce supply chains and associated private standards. Most farmers did not understand the various facets of modern horticultural supply chains and requirements for record keeping, traceability and attainment of well-defined produce attributes such as size, colour and firmness etc. The study also noted that the initiatives that have been implemented to provide training to small scale farmers have been delivered by various actors (e.g. NGOs, hotels and government extension staff) in an uncoordinated manner thus leading to multiple and mixed messages being delivered to the farmers. This lack of a coordinated approach in the delivery of extension messages by the different service providers has resulted in a plethora of diverse messages and farmers being confused about the exact meaning and requirements of food safety and quality standards. None of the sampled farmers were certified under any scheme.

4.4.3 High value horticultural crops

The study results also highlight that the majority of the sampled small scale farmers lack the required experience to grow high value horticultural crops required by modern markets. Of the sampled households in Livingstone / Kazangula, 74% confirmed that they have never grown spinach, while 92% and 74% have not grown baby corn and butternuts respectively (Figure 17). Similarly, 79% of the sampled households in Livingstone / Kazangula confirmed they have never grown water melons for the market. This lack of experience in the production of high value crops identified in the small scale farmers in Livingstone / Kazangula was comparable to the study results obtained in the sampled communities in Lusaka where 81% of the sampled households confirmed they had not

grown baby corn and butternuts respectively (Figure 18) and 58% also confirmed they had never grown carrots and water melons.

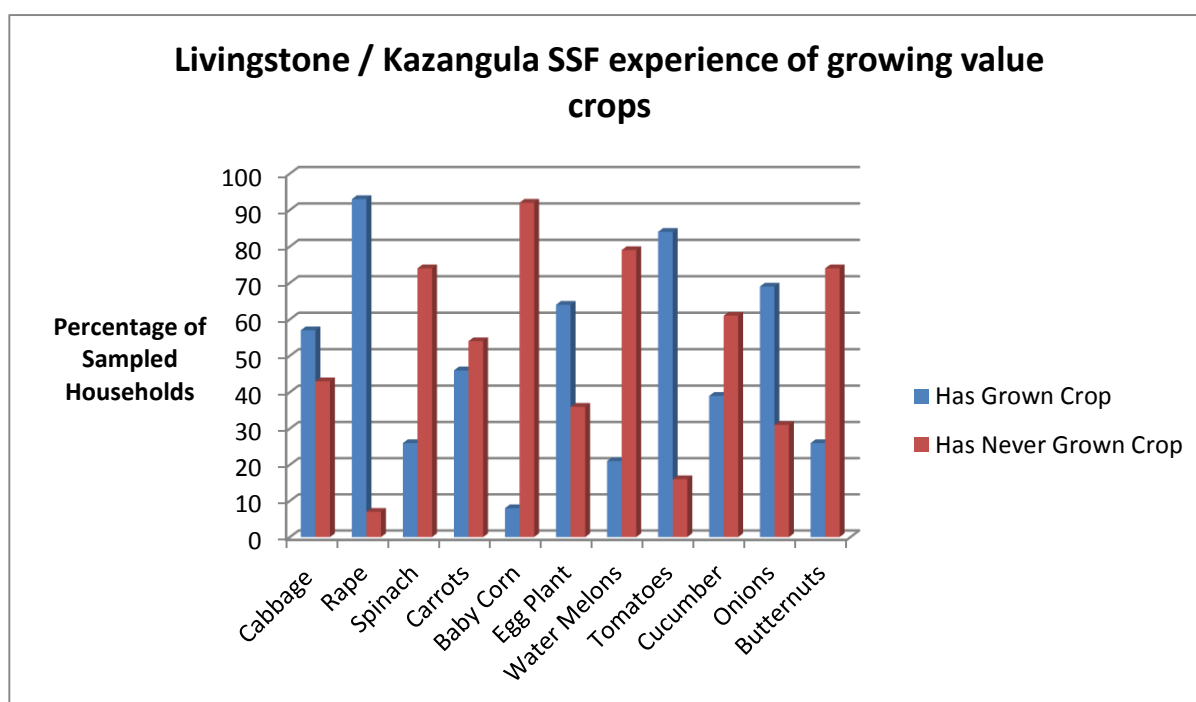


Figure 17: Sampled farmers experience of growing value crops

Source: Baseline Survey (Lusaka n=30, Livingstone/Kazangula n=64)

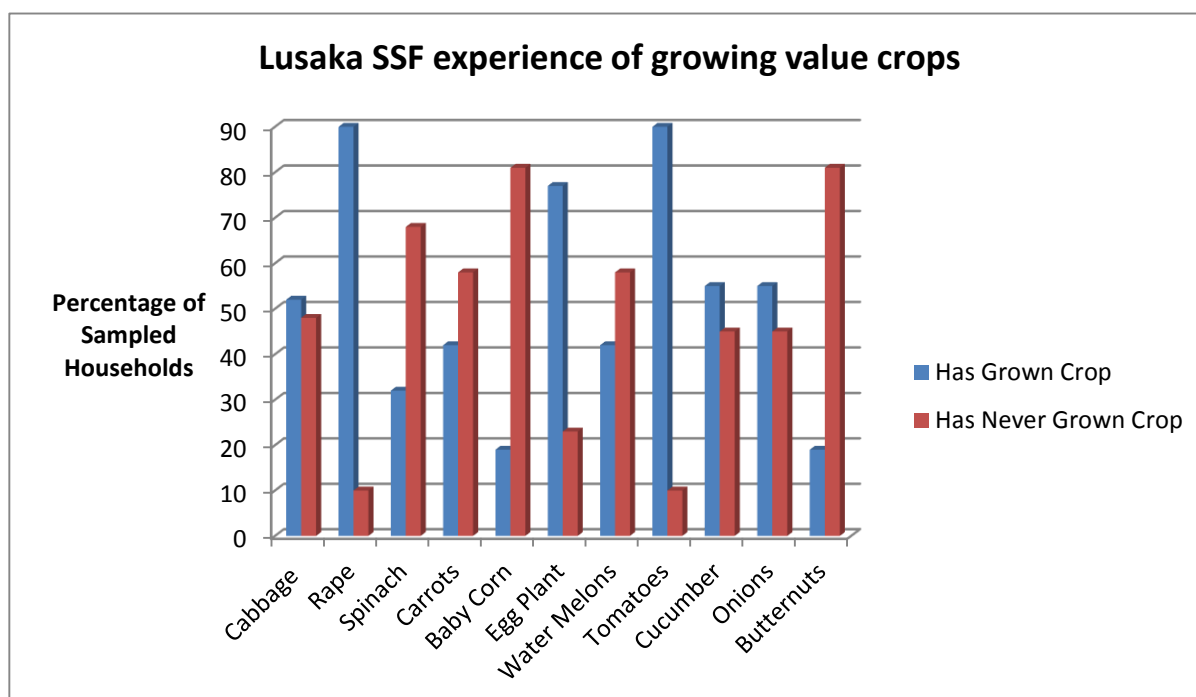


Figure 18: Lusaka small scale farmers experience of growing value crops.

Source: Baseline Survey (Lusaka n=30, Livingstone/Kazangula n=64)

The study results are in harmony with similar studies (see for example: Hichaambwa and Tschirley, 2006) which highlight how small scale farmers mainly concentrate on the growing of traditional vegetable varieties. The inputs required for these traditional vegetables (particularly seeds) are in most instances more easily available and cheaper for most farmers. Rape, tomatoes, cabbages and onions were identified as the four main crops that the sampled farmers have the most production and marketing experience in. As explained by Mr. Christopher Mancheya, one of the farmers interviewed in Nyeleti community in the south east zone in Lusaka, most farmers prefer to grow tomatoes because ***“the market is everywhere”***. Rape is also preferred because it is a fast maturing crop (5 weeks) and thus offers the farmers income returns within a short period of time. The study thus identified a need for comprehensive agronomic training on the production of most high value crops to ensure that the farmers have the required technical expertise to meet buyer requirements for produce including the way they are grown and the inputs used.

A key constraint observed by the study as limiting the capacity of small scale farmers to comply with food safety and quality standards is the cost of inputs for crop varieties required by modern markets and also other related upfront investments necessary to ensure produce safety and quality in line with set standards. Mr. Desmond Majaluwa, one of the farmers interviewed in Livingstone, Ndele community explained:

“too many inputs and investments are required by these modern supply chains which may delay my profit”

The study thus identified a need to link the small scale farmers to financial service providers to ensure that they strengthen their financial capital to fund the investments (including the purchase of inputs) required by modern horticultural markets. Equally important however is the provision of business training to ensure that the farmers develop their entrepreneurial skills (including developing strategies for risk mitigation) to promote an investment business culture amongst the farmers. In particular, it is important to emphasise the value of mixing short season, long season and indeed perennial crops to ensure investment in high value crops on the one hand and cash flow on the other.

4.4.4 Transport facilities to market centres

This study noted that some produce is damaged and lost as a result of transport constraints faced by the sampled growers when ferrying their produce to market centres. In Lusaka, the main markets where the sampled smallholder farmers take their produce to are Soweto market (centre of Lusaka town), the Tuesday market, Mandebvu market and Mutendere market. Several farmers also supply supermarkets such as Mellisa in Northmead and Kabulonga. In the southern province, Livingstone town is the main commercial centre for the two districts of Kazangula and Livingstone and the majority of small scale farmers sell at Maramba wholesale market, hotels, lodges and / or supermarkets located in Livingstone town. Farmers in Kazangula district, due to lack of transport, however also often sell their produce in Kazangula town (mainly traditional vegetables including tomatoes and onions).

Of the sampled households in Livingstone/Kazangula and Lusaka 69% and 81% respectively indicated that they rely on public transport such as buses to ferry their produce to target markets. These buses however do not service all the areas where the farmers are located and as such, the farmers have to carry their produce some distance to the bus stop. Some of the sampled farmers also indicated that they hire pick-up trucks or lorries to transport their produce to market centres from time to time. This however happens usually when a group of farmers come together to share the cost of hiring a vehicle – an early indicator of these farmers willingness to co-operate.

Transport related losses of FFV produce arise due to careless handling during loading and offloading of the produce. The transport entrepreneurs, who are involved in ferrying horticultural produce to the market in Lusaka particularly, as determined by Focus Group Discussions conducted, seek to maximise their profit revenue by loading on their vehicles as much produce as possible. As a result, the FFV produce is often squashed during transportation. It was interesting to note that 75% of the sampled farmers advised that the private transporters in the majority of instances do not have roadworthy vehicles. As an example, Mr. Jordan Ngwira, a farmer from Kayosha, central zone in Lusaka, explained:

“the mode of transport that we use to ferry our produce to the market normally operates at night. The owners of the vehicles prefer to travel at night when the police are less likely to be checking the physical condition of the vehicles”.

When there is a breakdown, there is always the risk that the perishable cargo may deteriorate. It should be noted, however, that night transport does mean cooler transport and market access earlier in the day! The limited transport options available to the sampled small scale farmers to ferry their produce to the market also often results in desperation leading to the use of inappropriate modes (whatever is available) with little regard to the suitability of the adopted transport means to preserve the quality of the commodities that they are hoping to sell (Figure 19).



Figure 19: Wheel Barrow used to transport tomatoes to market

Source: Baseline Survey

A related key constraint that was identified particularly in the southern province (e.g. Mambova - Kazangula) was the lack of suitable infrastructure particularly roads and bridges to facilitate safe and efficient movements to market centres in Livingstone and/or Kazangula towns. The community members in Mambova for instance rely on a canoe to cross a local river as part of their transport infrastructure when travelling to the main road linking Kazangula and Livingstone (Figure 20). Although no accidents were

reported, the lack of infrastructure such as required bridges was identified as a key constraint that limits farmer movements and access to input and output markets as some rivers become impassable particularly during the rainy season.



Figure 20: River crossing (Mambova community) – Kazangula District

Source: Field Data

The bicycle was also identified as one of the main means for transporting produce to markets by the smallholder farmers in all the sampled communities. In Kazangula and Livingstone in the southern province, 60% of the sampled households own a bicycle while 10% have a cart. 3% of the households have a truck and 2% of the households own a motor cycle (Figure 21).

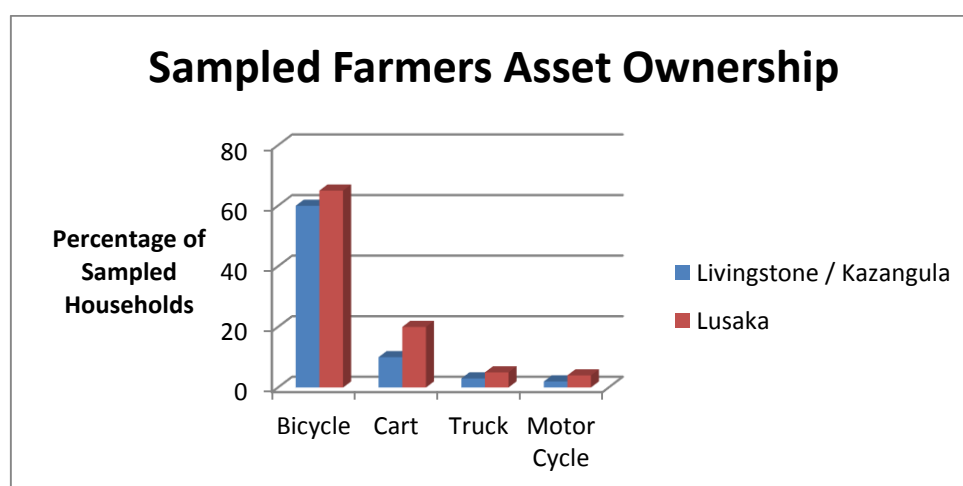


Figure 21: Sampled Farmers Asset Ownership.

Source: Baseline Survey (Lusaka n=30, Livingstone/Kazangula n=64)

In Jack Mwanampampa and Ndele (communities near Livingstone town) 74% and 65% respectively of the interviewed farmers indicated that they use the bicycle as the main transport to take their fresh produce to the market. Bicycles are normally used by men while the women in these communities normally walk to the market in Livingstone town. The farmers in both communities indicated that they normally leave their homes during the early hours of the morning, in most instances at 03:00hrs so that they can cycle or walk to Livingstone town to ensure that they arrive at the market centres (mainly Maramba market) at dawn when trading starts. Although cooler and reducing produce perishability, travelling at night exposes the smallholder farmers in these communities to the risk of robberies and related security concerns. When bicycles are used to ferry produce to the market, the problem is the limited quantity of produce that can be carried. Furthermore, there is also a related problem of produce damage in transit due to the rough roads, or rough handling or inappropriate packaging. For communities that are too far away from market centres where walking or cycling are not options, the interviewed respondents indicated that they are compelled to store the harvested produce while organising transport arrangements to ferry the commodities to the nearest market – this can lead to further produce deterioration. Furthermore in all the sampled communities, no cold chain storage facilities were observed. Given the fact that horticultural produce is perishable, low cost cold chain storage methods such as hydro cooling, ice cooling or the use of evaporative coolers are options that smallholder farmers could consider to cool produce during storage and transportation to the market (Acedo et al, 2016). Evaporative coolers for instance reduce the ambient temperature by up to 10 °C enabling the stored produce to last for a few days longer in a fresher state. This study thus observed that the inappropriate storage facilities used by the sampled smallholder growers often result in the farmers losing some of the harvested produce before it reaches the market. In some instances, the interviewed farmers indicated that they are forced to sell the produce at low prices at the farm gate before the produce turns bad. Consequently, in the majority of cases, the lack of sufficient infrastructure (good roads, bridges and cool storage) and lack of vehicles for produce transportation restricts horticultural activities to the areas where the farmers can easily transport harvested fresh produce to the market centres. This in turn limits the opportunities presented by the horticultural industry to particular geographical locations thus weakening the capacity of the industry to serve as a vehicle for economic development and poverty reduction for the wider rural population.

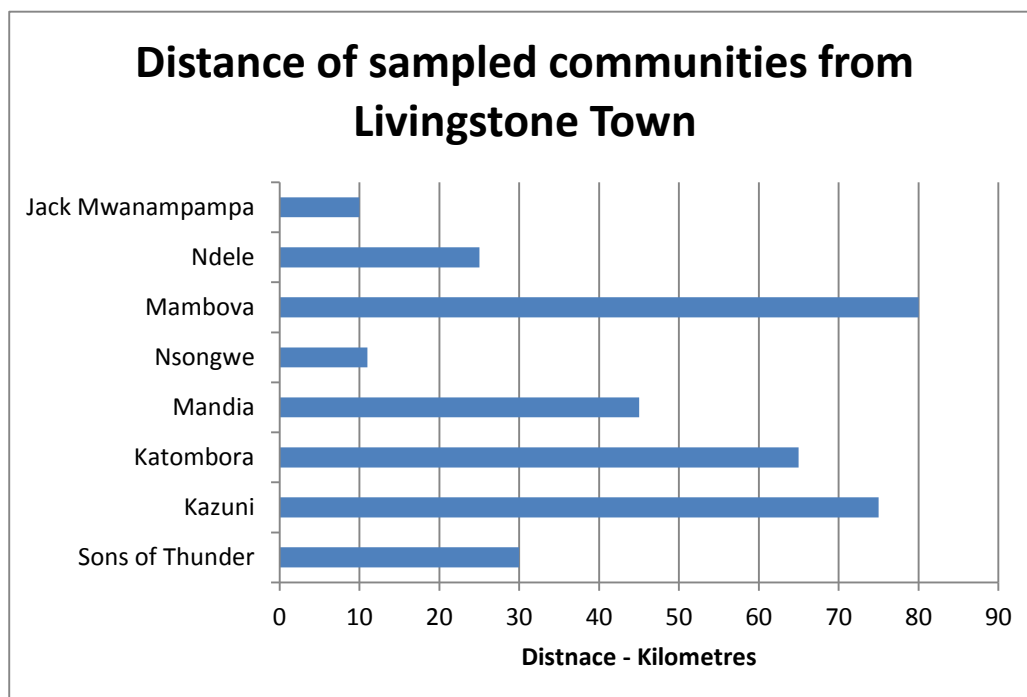


Figure 22: Distance of sampled locations from Livingstone Town

4.4.5 Produce Packaging and Cold Chains

Another constraint that was observed during this study relates to the small scale farmers lack of appropriate packaging materials to facilitate value addition and preservation of the marketed FFV. An example highlighting the usage of inappropriate packaging materials noted during the study was the large bags that the sampled farmers used to package Chinese cabbage (Figure 23).



Figure 23: Chinese cabbage packaging material

Source: Field Data

As seen Figure 23, the poor quality packaging materials used by the sampled smallholder farmers provides little protection for the produce against the elements leading to rapid produce deterioration. The majority of the farmers sampled in Lusaka mainly use wooden crates to package their tomato produce. These wooden crates are assembled at and can be purchased from Soweto market by the farmers (Figure 24); however, 55% of the sampled farmers raised concern about the cost of purchasing these crates. Some of the interviewed farmers also queried the robustness and durability of the wooden crates. Furthermore, the fact that the farmers over fill boxes and pile the tomatoes one on top of the other, often when the tomatoes are also too ripe and soft results in some of the produce being squashed and damaged particularly during transportation to the market.



Figure 24: Wooden crates used as packaging for tomatoes

Source: Field Data

4.4.7 Processing facilities for FFV produce

As highlighted by Figures 17-18, the sampled farmers mainly grow the same type of vegetables for the market, the common ones being tomatoes, rape, cabbage and onions. This situation consequently often results in supply gluts leading to supply greatly exceeding demand and commodity price collapse.



Figure 25: Cabbage at Soweto Market heaped in the open

Note degree of organic material wasted and the potential for contamination of produce

Source: Field Data

In such situations, when the fresh produce commodity supply is higher than demand, the produce resultantly stays longer on the market, without refrigeration facilities thereby reducing in safety, quality and eventually going to waste (Figure 25). This situation is aggravated by the lack of cold chain facilities during commodity transportation and at the market centres to preserve the produce for longer shelf life. The study thus noted the need for cool storage on the one hand and also increased processing technologies to facilitate the preservation of surplus produce for use during periods when supply on the market is limited.

4.4.8 Information and Communication Technologies

One exciting development in recent years has been with information and communication technologies (ICTs) such as mobile phones and the internet. The results from this study indicate the vast potential of ICTs in efforts aimed at dealing with some of the challenges that small scale farmers face in marketing their produce. These technologies are transforming how marketing is carried out, allowing farmers to get information about current market prices and linking them directly to buyers.

The importance of mobile phones was explained by Mr. John Mwamba of Jack Mwanampampa community in Livingstone;

“I either phone my agent(s) (middlemen) or they call me to communicate which FFV commodities are ready for the market. The agent(s) communicate the market prices for the different farm produce that they require to buy. I always make sure that I am updated on prices at different market places and having secured this information, I then decide which agent to sell to or which market I should take my produce to – providing me with the best profit margin”.

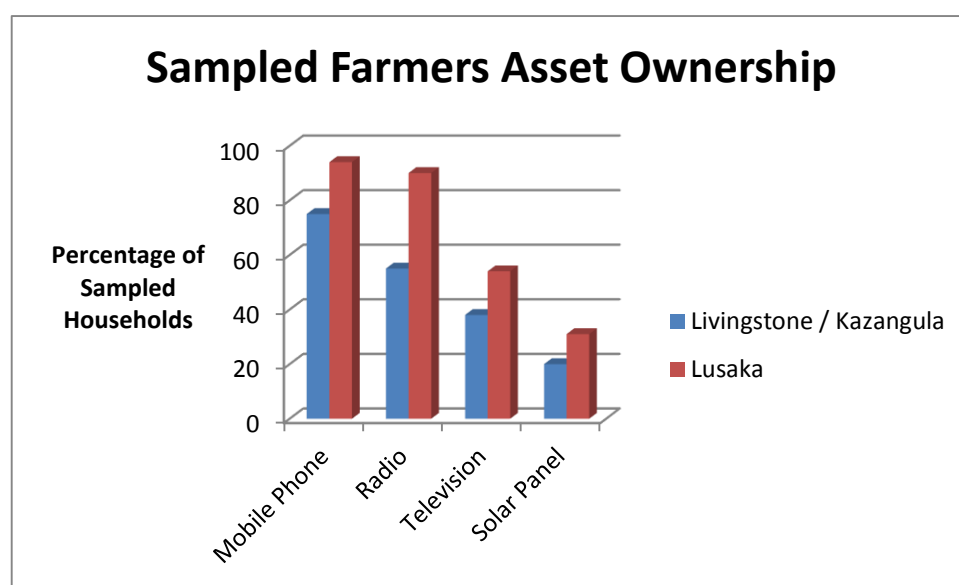


Figure 26: Household ownership of communication and energy technologies.

Source: Baseline Survey. (Lusaka n=30, Livingstone/Kazangula n=64)

The study results confirm the growth in mobile phone usage in Zambia as 94% and 75% of the sampled households in Lusaka and Livingstone/Kazangula respectively confirmed ownership and usage of at least one mobile handset within the household (Figure 26). The interviewed small scale farmers indicated that the mobile phone service has not only transformed the way they do their business but also made their lives easier. An example provided was, in the past, when there was a funeral, a representative of the family had to travel to communicate the message to other relatives in different parts of the country. With the mobile phones available to most farmers, the respondents indicated that such messages could now be communicated within minutes, saving them much needed time and financial resources previously used for travel.

The study also confirmed that the Zambia National Farmers Union publishes market information on the web¹⁷ and sends out trader and price details to farmers using a system of SMS messages. This market information system was developed based on the experiences of similar initiatives implemented in Kenya and is intended to benefit farmers by making available the latest market prices for different produce as well as information on the traders offering the deals. Farmers wanting to know the price of a particular product simply type the code into an SMS message and send it to the specified number. Moments later, the system sends back another SMS with the latest prices and the codes for the traders offering those prices. The farmer selects a trader and sends the code in a second SMS to the system which then replies with the trader's full name, phone number, business address and even directions. The farmer can then contact the trader directly. This price announcement system currently provides market data for 15 commodities (maize, soybeans, beef, sunflower, groundnuts, goats, rice, honey, sheep, wheat, beans, sorghum, pigs, cassava and cowpeas); expanding this to include produce prices would be of benefit to those seeking markets for horticultural produce, even if only at the local market scale.

As such, while in the past, sales of agricultural crops have normally been done through face to face meetings typically in a market place, information and communication technologies now provide an alternative and much more efficient process which reduces the need for farmers to actually leave their farms in order to visit markets; however, this could undermine the social value of farmers meeting up on market days. This in turn facilitates reductions in their transaction costs and provides the farmers much needed time to focus on production activities. This study however noted that, although the initiative by the Zambia National Farmers Union provides a useful service to Zambian farmers, the commodities for which market data is available however is currently limited providing no information on the main horticultural crops that are grown by the small scale farmers (e.g. cabbages, onions, tomatoes, rape etc.). The commodities that are mainly covered are cereal field crops, livestock as well as other field cash crops like sunflower and groundnuts.

¹⁷ See <http://www.farmprices.co.zm/index.php?page=home>

Another identified challenge relates to the lack of energy to charge cellular phone batteries. The study confirmed that the majority of the sampled farmers experience challenges with mobile phones due to lack of infrastructure particularly electricity. Only 31% and 20% of the sampled households in Lusaka and Livingstone / Kazangula respectively indicated that they had a solar panel for home use¹⁸ including mobile phone charging. The majority of the sampled farmers indicated that they pay a fee ranging from 1000 – 2500 Zambian kwachas to service providers at trading centres, who have access to electricity, to have their phones charged. This is a key constraint as the farmers mobile phones are thus not always ready for use particularly during periods when they don't have sufficient money to have their phone batteries charged at the battery charging service outlets. Another constraint; however, is whether appropriate information is being collated and sent via mobile phone networks.

Airtel is the mobile network mostly utilised by the small scale farmers in all the sampled locations (Figure 27). Another key challenge that was also identified by this study relates to weak signal strength of the mobile phone networks particularly in communities located further away from the main town(s) and trading centres. Of the sampled households, 35% confirmed that they have (or frequently experience) weak signal strength in their communities and that they needed to be at particular spots within the community to be able to make or receive calls and / or SMS data. This in turn was identified as a constraint that reduced the efficiency of mobile phones in the transformation of smallholder horticultural production and marketing activities in the sampled locations.

¹⁸ In most instances the solar panel is used to charge a battery providing required energy for radio and television usage

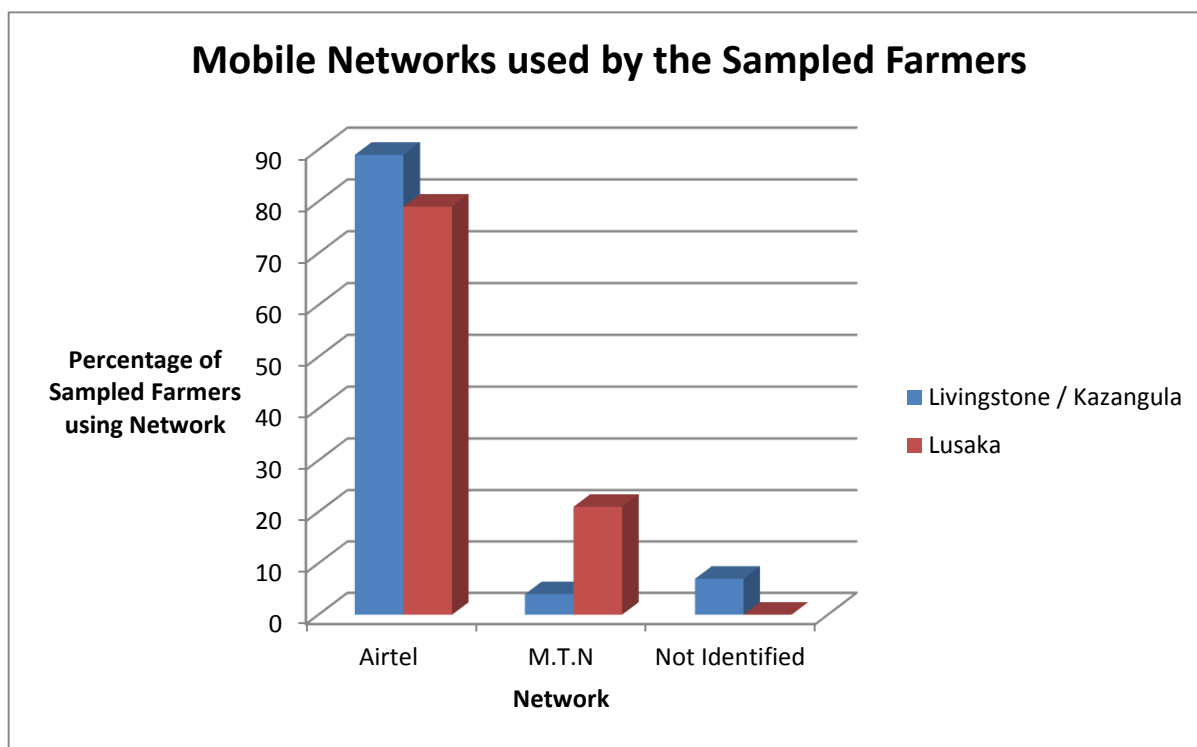


Figure 27: Mobile network(s) used by sampled households.

Source: Baseline Survey. (Lusaka n=30, Livingstone/Kazangula n=64)

4.4.9 Other Challenges

Other issues that were identified during the baseline study as limiting small scale farmers' horticultural production and marketing activities in the sampled locations included the following:

Crop destruction by animals: Crop destruction by animals, particularly elephants, was identified as a key challenge faced by the farmers in Livingstone and Kazangula. This area is a tourism zone and has several game parks with assorted animals; 83% of the sampled farmers in Livingstone and Kazangula confirmed destruction of their vegetable plots, particularly at night, by elephants that crossed into their communities from the nearby game reserves. This problem is so rife such that the Nsongwe Women's Association, a women's group established by Africare in 2005 and supported by IDE and ASNAPP to supply Sun International hotel in Livingstone with high value produce, stopped operations in 2009 when all their vegetable produce was destroyed by elephants. Consequently, the group's membership has reduced from the initial 30 women to only 18 due to

frustrations and viability challenges posed by the huge animal presence in the location. Sun International has recently stepped in, providing the remaining women in the association with support to erect electric fencing around the 2 hectares of land available to the group for their activities. The problem of crop destruction by elephants was also confirmed by Africa Now, an NGO that operates in the province. Africa Now advised that while electric fences (solar powered) can act as a barrier to stop the elephants from accessing the vegetable plots, their effectiveness is enhanced if multiple Problem Animal Control (PAC) techniques are used including the use of chilli fences around the vegetable gardens to deter the elephants.

Tax Certificates from the Zambia Revenue Authority: The farmers in Lusaka advised that Freshmark, the fresh produce buying arm of Shoprite, requires all its suppliers to provide a tax certificate issued by the Zambia Revenue Authority confirming their tax clearance and remittances to the Zambian Government. This document is a “must provide” that Freshmark requires to see before any farmer is listed on their approved suppliers list. This requirement was identified as an immediate barrier limiting the smallholder farmer’s inclusion to supply Shoprite as the majority of the sampled farmers do not pay taxes and they have no tax clearance certificates.

4.4.10 Women Participation in Horticulture Activities

In both the Southern and Lusaka provinces, the male head in the household normally takes the leading role in decision making to select the type of horticultural produce grown and the markets accessed (Nenguwo, 2004). Women however play a major role in the production and marketing of FFV both as a source of labour and as owners of fields. Women in Livingstone district are quite often more involved in the production of vegetables such as okra, African egg plants and the leafy ones such as rape, chinese cabbage, spinach, and the local traditional leaves. Studies that have been conducted (see Sitko et al, 2011) indicate that 14.9% and 14.2% of households in the southern province have women engaged in the production and marketing of FFV; in contrast women in Lusaka make up 23.1% and 26.1% of the growing and selling population respectively (see Figure 28 below):

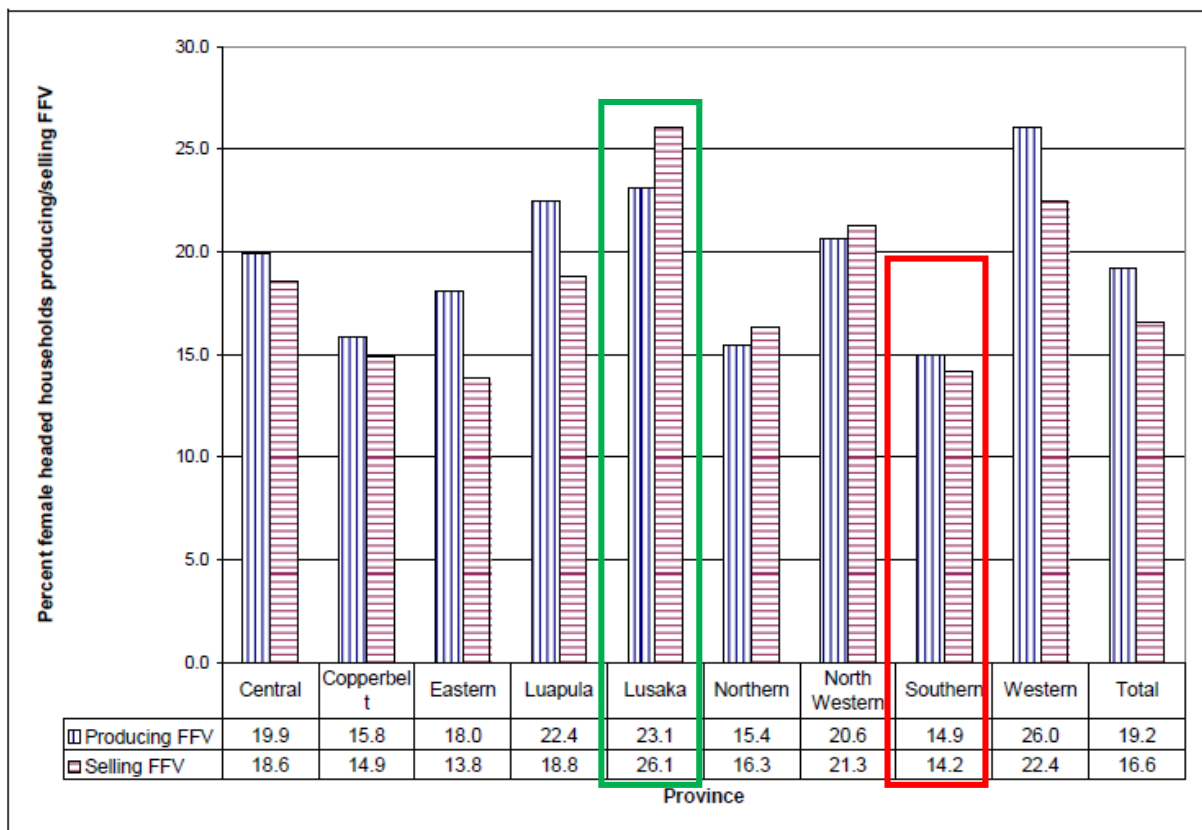


Figure 28: Proportion of women producing and selling fresh fruit and vegetables

Source: Sitko et al (2011)

This study noted that there are several specific roles and responsibilities that are assigned to men and women related to horticulture production and marketing. For instance, roles like ploughing, tilling of land and tree cutting are usually assigned to men while sowing, sorting and packaging are roles mainly assigned to women. Other roles like weeding and harvesting are performed by both men and women (Table 16).

Table 16: Gender roles in horticultural activities

Activity	Men	Women	Both
Land Preparation	***	*	
Garden Fencing	***		
Decision on crop	***		*
Purchase of inputs	***	*	
Planting / sowing	*	***	
Weeding / cultivating	*	***	
Fertiliser application			***
Watering / irrigation	**	***	
Harvesting	**	***	
Selling of Produce	**	***	
Keeping Money	***	***	
Attending organised farmer meetings	***		***
Land Ownership	***		

(Note: Major role~ *** or **; less involved ~ *)

Source: Baseline Survey Data

Although women play critical roles in horticulture production and marketing activities in both Lusaka and Livingstone – the study noted that there are some cultural beliefs and practices that are likely to affect the full inclusion of women in horticultural production and marketing activities. For instance, respondents engaged in Focus Group Discussions in Jack Mwanampampa community in Livingstone indicated that some communities believe that if a woman who is menstruating enters a vegetable garden, the vegetables would dry up. In addition – there are cultural beliefs that if a menstruating woman picks or harvests fresh vegetables from the garden, those vegetables would be bitter in taste. Clearly such beliefs imply that women in the reproductive age group would not be able to participate in the horticulture activities for about 4 to 7 days each month. This implies that horticulture activities would have to be left to men for that period each month. This potentially may result in increased workloads for the men or work not being done during these periods which in turn could likely affect the quality of products.

4.5 Conclusion

This chapter provides an overview of the main study location (Livingstone), highlighting specifically its history, the main livelihood activities conducted in the area including agricultural activities of small scale farmers in the area. The chapter has provided a brief history of Livingstone town tracing it to the construction of the bridge at the Victoria Falls explaining also the presence of the Leya and Lozi people as the dominant tribes in the area. The strategic economic and political importance of Livingstone town has also been highlighted, as the provincial capital of the southern province and as a major tourist attraction location linked to the Victoria Falls and the wildlife in the area. As explained in the chapter, tourism activities have generated livelihood opportunities linked to the sale of crafts and curios as well as for small scale commercial farmers who are able to structure their agricultural production and marketing activities to meet the requirements of markets including hotels, lodges and retail supermarkets which service tourists who come from different parts of the world. The livelihood strategies in relation to horticulture in the study area were compared to smallholder farmers in Kazangula and Lusaka and this allowed the researcher to better understand general smallholder horticultural production and marketing strategies in Zambia where the main variables were a different agro-ecological zones (Livingstone and Kazangula in Zone 1 and Lusaka in Zone IIa) and slightly different markets where smallholder farmers in Livingstone / Kazangula are mainly dependant on the tourism in the area compared to Lusaka which had a history of produce exporting and has a growing urban market including growing market penetration by formal retail chains in the sale of fresh fruit and vegetables. This chapter has therefore provides required background information on the research location. This leads us on to Chapter 5 which provides a detailed discussion of the research methods that were employed to test the study hypotheses and provides the results that were obtained from the study.

Chapter 5: Study Methodology and Results

This chapter presents the results secured by the study relating to the research hypotheses presented earlier in Chapter 1. The research methods that were used to test these hypotheses are discussed. Furthermore, the study results are compared to other studies conducted by other scholars on similar research topics.

5.1 The Farmers Green Market Case Study

This research study employed a case study approach focusing on an agribusiness enterprise development project¹⁹ which was implemented by Africa Now²⁰ with grant funding support from the European Union during the period 2008 – 2011. The project goal was to increase smallholder farmers' incomes through their improved participation in domestic and regional horticultural markets. The project acknowledged that while the majority of the rural population in Livingstone engaged in some level of vegetable production, there were confronted by several constraints, the primary ones being:

- A. The density of wild animals in the area which made it difficult for smallholder farmers to engage in horticultural production as the large animals destroyed established vegetable gardens leaving the farmers with no earnings and potential food insecurity.
- B. Smallholder farmers tended to grow the same vegetables each season (mainly due to lack of information on market requirements such as type of crops and volumes). Consequently, this caused the market to become saturated with traditional crops and for prices to fall.
- C. Ineffective smallholder farmers organisation which limited their ability to negotiate favourable commercial deals with other market actors (e.g. output buyers and other input service providers)

¹⁹ The Project action was referred to as the “Profitable High Value and Organic Vegetable Production for Rural Producers in Southern Province, Zambia”

²⁰ Africa Now is a Non-Governmental Organisation which provides technical assistance to smallholder farmers and small businesses to develop viable enterprises. The organisation also facilitates linkages between smallholder farmers and providers of other interconnected services required for agribusiness development. Website: www.africanow.org

- D. Lack of clean / professionally organised fresh produce distribution / retail outlet in Livingstone despite the increasing numbers of tourists (and other expatriates) who arrived in the town. This represented a lost opportunity for the local smallholder growers as vegetables were being sourced from South Africa and Lusaka through commercial supermarkets such as SPAR and Shoprite due to weak farmer organisation to supply required fresh produce. The fact that fresh produce was being sourced from South Africa and Lusaka also pushed the prices up due to transport charges.
- E. The opening up of the SADC market through trade agreements within the region represented an opportunity for smallholder farmers to supply fresh produce in neighbouring SADC countries (e.g. South Africa). This however also represented a lost opportunity for smallholder farmers as the farmers were not organised efficiently to engage and benefit from such markets.

In order to address the above constraints, the *Profitable High Value and Organic Vegetable Production for Rural Producers in Southern Province, Zambia* project sought to deliver the following interventions:

1. To facilitate the organisation of smallholder farmers in Livingstone to improve their participation in markets for high value produce building their capacity to trade within the local and cross border economies.
2. Promote environmentally sustainable agricultural practices and profitable trade (mainly through acquisition of Organic certification).
3. Strengthen smallholder farmer's inclusion in horticultural markets through lobbying for suitable policies representing smallholder interests.
4. Improve the aggregation, distribution and retail of smallholder farmer's horticultural produce in Livingstone through establishment of a distribution / retail outlet.
5. Promote a range of Problem Animal Control Techniques (mainly use of chilli fences) to minimise horticultural crop destruction by wildlife.

This three year initiative funded by the European Union to the tune of 609,800 Euros resulted in the establishment of the Farmers Green Market – a Produce Marketing Organisation (Market Integrator) whose mandate was to link smallholder farmers to value domestic and regional horticultural markets (See Figure 28). The Farmers Green Market was intended to facilitate the bulking of smallholder farmers horticultural produce as well as provision of other business development services such as agricultural extension, access to finance and technologies (particularly cold chain facilities) to promote the appropriate preservation and storage of smallholder farmers produce prior to delivery to identified markets.



Figure 29: Farmers Green Market Board

Source: Field Data

The Farmers Green Market was established as a market integrator to run as a registered profit oriented company managed by Livingstone Farmers' Cooperative Society (LFCS) whose primary goal is to provide agribusiness development services to its members (Box 3). The project facilitation model is highlighted (Figure 30).

Box 3: The Livingstone Farmers Cooperative Society

The Livingstone Farmers' Cooperative Society (LFCS) was formed in 1982. It is a registered cooperative society located in Livingstone whose operational activities are guided by defined by-laws linked to its goal to promote the economic, social and cultural interests of its members. To achieve this goal, the society strives to purchase, store and transport agricultural produce collected among its members and market such produce, process or handle them. The by-laws of the society also state that it can collect savings from members and participate in credit schemes or organize to promote agricultural production and marketing to benefit its members. The society also seeks to protect its membership from unfair business practice in agricultural trade and commerce and contributing towards bringing social justice to the market place.

At the time of conducting this study, LFCS had one hundred and seventy seven members all from communities surrounding Livingstone town. Any male or female who is 16 years and above and lives within the trading area of LFCS and is ready to champion the cause of the society is eligible to become a member regardless of social status, political affiliation, race and creed. Institutions and associations which are ready to help promote the aims and objectives of the society can also be considered for membership. A minimum of 10 members is stipulated by the by-laws but no maximum cap is set. At the time of conducting this study, LFCS had a Board of Directors (BoD) which had been elected by the general meeting of members. The BoD was mandated with the responsibility to oversee the operational control of the society on behalf of its members including watching over the business management activities of the society, managing the financial resources and coordinating the delivery of services to the membership. This included collective purchase of agricultural inputs and bulking of produce to supply identified output markets. The BoD also had the legal responsibility to arrange and conduct an Annual General Meeting (AGM) for its members in line with the Cooperative Societies Act (1970) which states that the Board shall "approve or prepare for submission to the Chairman a report to the annual general meeting respecting the work of the directors during the preceding year, the progress of the society during such year together with such recommendations as appear necessary to achieve the objects of the society and to improve the services to members". Furthermore, the BoD was mandated to develop and implement the business strategy of the cooperative society as well as to constantly inform its members about the business of the society. This has to be done through periodic reports and publishing of the society's performance and activities in newspapers and any other ways that will enable the members of the society to determine its progress.

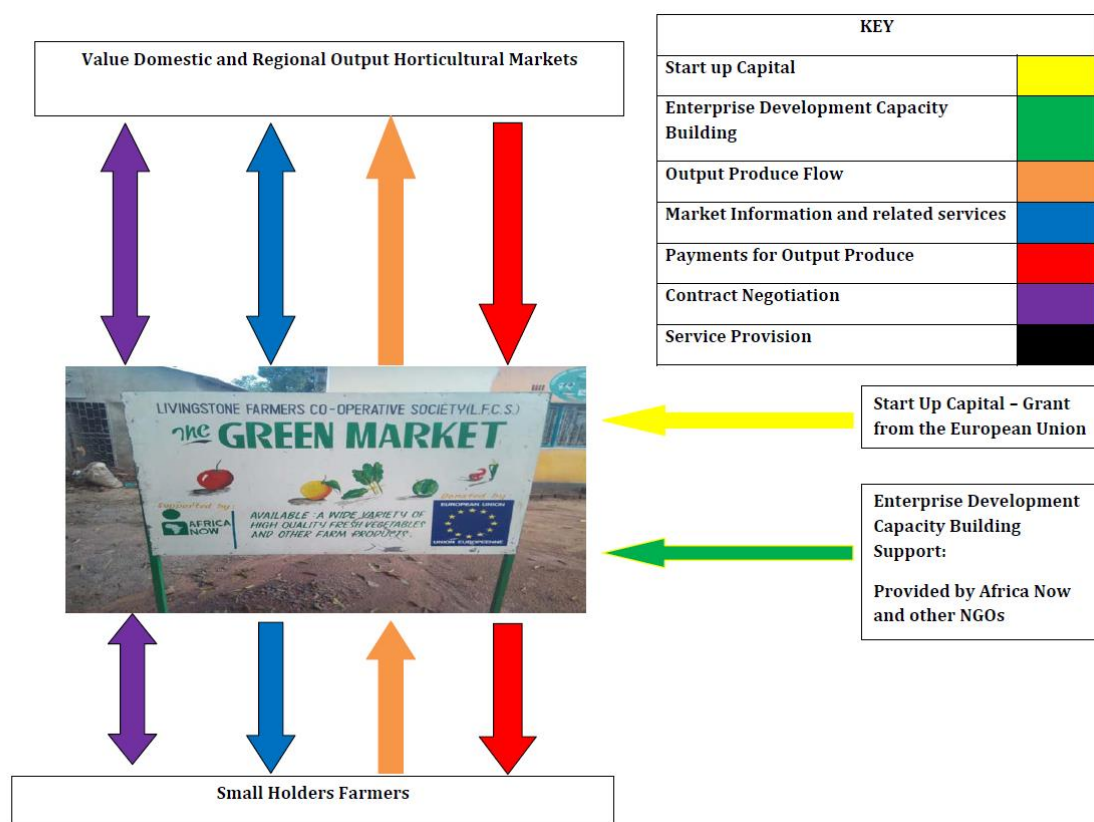


Figure 30: The Farmers Green Market Project Model

5.1.1 Management Structure

In order to support the efficient management of the Farmers Green Market, The Livingstone Farmers Cooperative Society (LFCS) established a special management committee tasked to oversee the commercial activities of the Farmers Green Market. This management committee was made up of appointed representatives of the LFCS who were selected from the cooperative membership and mandated by the LFCS Board of Directors. The appointed management committee was constituted of six representatives (not salaried) tasked with the challenging role to provide strategic steering of the Farmers Green Market commercial activities to generate profitable benefits and opportunities for the LFCS membership. The management committee recruited a Manager for the Farmers Green Market – a role that involved the operational management of the produce marketing organisation commercial activities. In addition, a shopkeeper was also

engaged to receive produce from contracted smallholder farmers and to sell produce in the shop to walk-in customers. The shop keeper also maintained a register of sales records and financial transactions which were periodically reviewed by the Manager and representatives of the Management Committee. The Farmers Green Market Manager and Shop Keeper roles were both salaried positions which were fully funded (not from the commercial activities of the PMO) but from the European Union supported project budget. The financial support provided for these roles was intended to be for a determined incubation period until such a time when the Farmers Green Market had sufficient business volume to resource salaries payment for its staff. The organogram of the Farmers Green Market is highlighted (Figure 31).

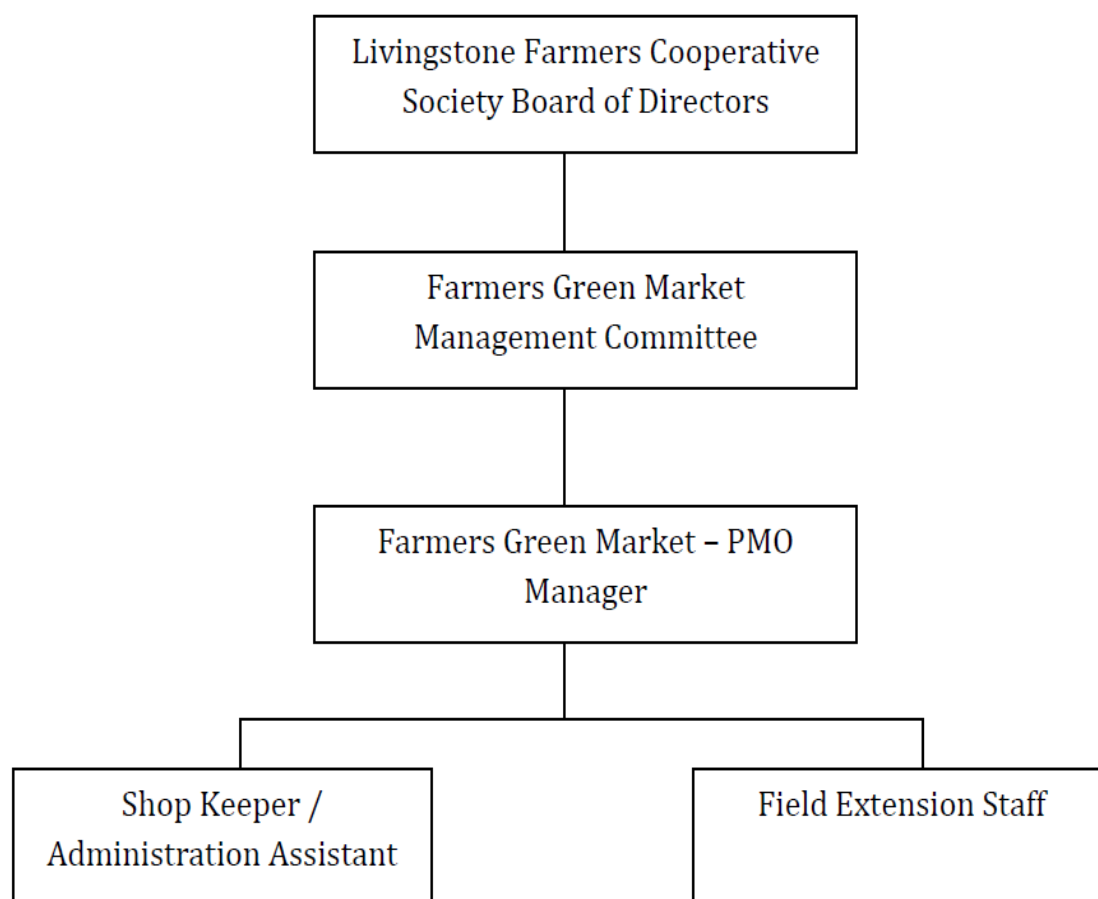


Figure 31: Farmers Green Market Organogram

5.1.2 Engagement with Smallholder Farmers

The Farmers Green Market had verbal agreements with the membership of the LFCS that it would purchase all fresh fruit and vegetable produce supplied to the store. No specific produce volumes were provided to the LFCS membership to indicate the amount (and type) of horticulture produce that would be purchased at different times by the Farmers Green Market. The Farmers Green Market did not provide inputs to the smallholder farmers; however, start-up input packages for assorted high value vegetable produce (butternuts, lettuce, broccoli etc) had been distributed (for free) through Africa Now – the lead facilitating Non Governmental Organisation on this initiative. At the time of conducting this study, a total of thirty five (35) smallholder farmers supplied the Farmers Green Market with assorted produce regularly. Upon arrival, the produce was graded and recorded by the shop keeper. The supplying farmer would sign to confirm volume of produce supplied and agreement to the produce grading result. The supplying farmer was paid by the Farmers Green Market within a thirty day period. In most cases, the supplying farmer would come to the Farmers Green Market to receive the payment at the store. The purchased horticultural produce was kept chilled in the cold rooms that were purchased for the Produce Marketing Organisation with funding from the European Union (Figure 32).

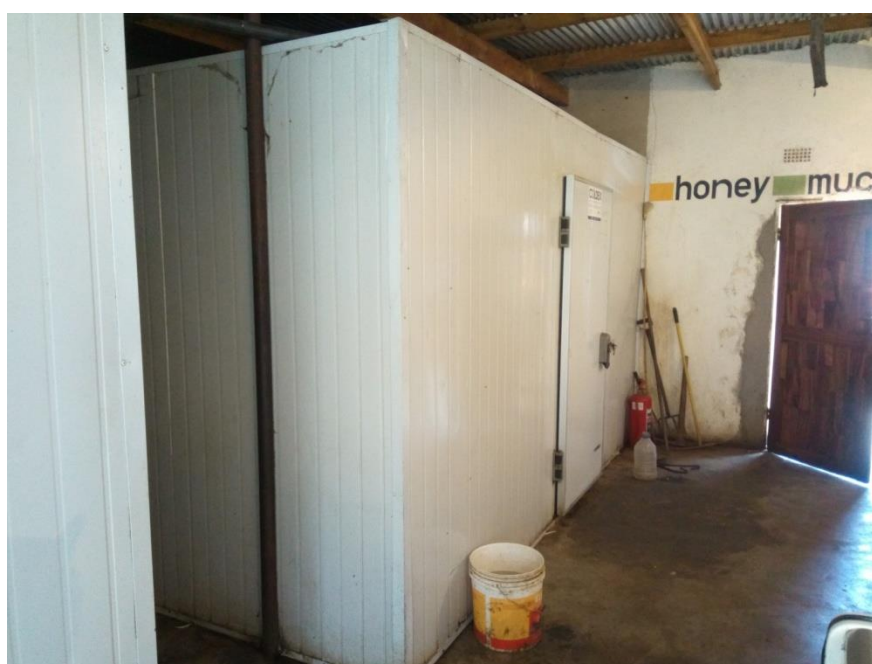


Figure 32: Installed Cold Rooms

5.2 Research Methodology

This research study utilized the Farmers Green Market as a case study to test Hypothesis 1 which sought to determine if linking smallholder farmers to a market integrator resulted in improved smallholder farmer's access to information on:

- Food safety and quality standards required by contemporary value horticultural markets
- Produce volumes required by target markets, and
- Market prices for commodities sold by the farmers.

The same case study was also utilized to test hypothesis 2(a) and (b) intended to determine whether site specific investments promote entrenchment of trust between the market integrator and smallholder farmers and if smallholder farmer's willingness to participate in certification programmes is linked to their level of trust of the market integrator.

This study therefore resembles an impact assessment which is one of the more comprehensive types of action research utilized by researchers and practitioners in the field of development. Impact assessments are results oriented and typically divided into short term outputs, intermediate – term outcomes and long term impacts of the project which is also in line with the concept of the 'Theory of Change' (Valters, 2014). Observing the business activities of the Farmers Green Market initiative over a period of 24 months allowed reporting on some of the short term outputs and intermediate outcomes of the project. In order to assess the effect of the intervention on the target smallholder farmers, pre-test and post-test research design was used. This research study did not start before the project intervention; therefore, the first round of interviews conducted was designed to assess the general smallholder farmer's baseline position in the study location and Lusaka as proxy for horticulture in Zambia (Chapter 4). In addition, smallholders in the case study area were asked about their participation in horticultural value chains before the establishment of the Farmers Green Market. Subsequent interviews were designed to allow sufficient room for the smallholder farmers to comment on how the project interventions had changed or had not changed their position as actors in the horticulture value chain.

The research design for this study was constructed on the premise that the findings would prove useful to other study stakeholders particularly the Government of Zambia, the specific farmers' co-operative, private sector supermarkets and development organisations that are committed to promote the inclusion of smallholder farmers in contemporary agribusiness value chains. Throughout the course of this study, particular efforts were taken to provide these stakeholders feedback on emerging findings and the recommendations provided in Chapter 6 were also specifically tailored for use by private sector retail companies and other development actors engaged in horticulture-enterprise development initiatives and committed to inclusive business approaches.

Baxter and Jack (2008) argue that the case study method enables a researcher to explore complex phenomena within its natural context, using a variety of data sources. The case study methodology allows data not to be explored through one lens but rather from a variety of angles thus enabling multiple facets of the phenomena being studied to be revealed and understood (Stake, 1995; Yin, 2003; Hancock and Algozzine, 2006).

Yin (2003) further highlights that a case study research design is appropriate when:

- The focus of the study is to answer how and why questions
- You cannot manipulate the behaviour of those involved in the study
- You want to cover contextual conditions because you believe they are relevant to the phenomenon under study
- The boundaries are not clear between the phenomenon and the study

An investigation to understand the business behaviour and relationships between value chain actors is a complex exercise. As such, a case study approach was employed for this research study due to the qualitative nature of the data in addition to the added ability to explore a wider range of variables that affect the structure and performance of small scale farmers' horticultural production and marketing operations.

Critics of the case study method on the contrary believe that the study of a small number of cases can offer no grounds for establishing reliability or generality of findings (see for example Kohn, 1997). This point is however countered for example by Marshall (1996) who argues that “improved understanding of complex human issues is more important than generalizability of results”. Other critics are often of the opinion that the intense exposure of the researcher to subjects in the cases creates biases in the presentation of findings. This point is expressed for example by Yin (1984) who argues that “too many times, the case study investigator has been sloppy and has allowed equivocal evidence or biased views to influence the direction of the findings and conclusions”. Other critics dismiss case study research as useful only as an exploratory tool and yet researchers, throughout the world, continue to use the case study research method with success in carefully planned and crafted studies of real-life situations, issues and problems. As Zainal (2007) explains, “although there remains intense debate on the case study approach to data collection, this method is widely used and recognised in many social science studies especially when a holistic, in-depth investigation is required”.

5.2.1 Data Collection Methods

In order to test the hypotheses presented earlier, the research study applied mixed research methods approach (Marsland et al, 2000) to facilitate the collection and triangulation of data. The study employed a combination of qualitative and quantitative data collection methods involving the following:

Review of secondary literature: This involved analysis of several project documents including the project concept note, full proposal and progress reports submitted to the European Union by Africa Now. Other key documents such as the Zambian Ministry of Agriculture Strategy for 2005 – 2015 and the National Agricultural Policy 2012 - 2030 were also reviewed together with horticulture market analysis studies of the study area and previous research on smallholder farmer’s participation in agricultural value chains.

Key Informant Interviews: A total of 24 key informant interviews were also conducted with representatives from the Farmers Green Market management committee, government officials from the Ministry of Agriculture and Co-operatives, stakeholders from various NGOs such as Africa Now, the Organic Processors Association of Zambia

(OPAZ) and the International Development Enterprises (IDE). Key informant discussions were also conducted with key private sector stakeholders on the project including retail supermarkets such as Shoprite Zambia, SPAR Zambia and representatives from the hospitality and tourism industry in Livingstone particularly the hotel and lodge operators who sourced (or indicated interest) to secure horticultural produce from smallholder farmers through the Farmers Green Market.

Participant Observation of the Farmers Green Market activities including training activities that were conducted to build the capacity of smallholder farmers on Good Agricultural Practices (GAPs). The researcher also participated in business leadership and governance training courses that were conducted by Africa Now targeting the management committee of the Farmers Green Market and LFCS. The observation by the researcher also involved visits to the smallholder farmer's horticultural gardens to assess the scale and production methods utilised by the farmers (Figure 33). This also included observing the main crops grown, water sources and irrigation technologies that are utilised by these farmers. These field visits were arranged by extension officers engaged by Africa Now and the International Development Enterprises (IDE) to provide technical backstopping to the smallholder farmers on Good Agricultural Practices and to promote the concept of Farming as a Business.

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Figure 33: Visit to Farmers Production Fields

Source: Field Data

These visits were also utilised by the project officers to provide extension advice to farmers on a variety of agronomic issues relating to their horticultural activities and this was observed by the researcher.

Semi Structured Interviews with smallholder farmers were conducted to facilitate measurement of the amount and type of market information that the small holder farmers secured from the Farmers Green Market, determine their willingness to participate in certification programme(s) as well as investigate any potential relationship between site specific investments and the level of trust between the smallholder farmers and the Farmers Green Market²¹. The semi structured interviews were conducted with the support of two enumerators who were proficient in the local languages spoken in the study area.

Before the actual data collection, a training session was held in Livingstone to equip the two enumerators with the relevant skills needed, including how to administer the data collection tools. In that training the translation was also reviewed to correct any interpretation errors. Shortly after the training, the tools were pretested in Mambova community covering smallholder farmers engaged in horticulture production and marketing and therefore with similar profiles as the respondents that were targeted by the study but who were not supplying the Green Market (Figure 34). The training and pre-testing gave the enumerators an opportunity to understand the survey questions, gain practice in completing the questionnaire and practice on the interviewing techniques. The pre-testing of the tools also assisted in assessing the appropriateness of the questions, and facilitating adjustments where necessary.

²¹Refer to annex 3

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Figure 34: Enumerator testing study tools in Mambova

Source: Field Data

Focus Group Discussions:

Pertinent issues that emerged from individual interviews with the sampled smallholder farmers were further discussed during follow up Focus Group Discussions which were designed to allow further debate on emerging pertinent issues linked to the scope of the study. A total of twelve focus group discussions were conducted with the small holder farmers, each FGD consisting of an average of 8 small scale farmers (Figure 35).

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Figure 35: Focus Group Discussions conducted during the study

Source: Field Data

The Focus Group Discussions were facilitated by 2 Enumerators – one enumerator assumed leadership to steer the discussion while the other observed the dynamics of the group (including body language of the participants) and took notes on the discussion for the record and analysis.

5.3 Study Time Frame

The project “Profitable High Value and Organic Vegetable Production for Rural Producers in Southern Province, Zambia” started on the 1st of February 2008. This research study commenced in September 2009 thus 20 months after implementation project. In September 2009, when this research study commenced, Africa Now (working closely with LFCS and other related stakeholders) had conducted training of target smallholder farmers on Good Agricultural Practices as well as the use of Problem Animal Control (PAC) techniques to reduce the destruction of vegetable plots by wildlife. Possibilities for group certification of the growers under Fair Trade were being explored. The construction of the Farmers Green Market produce bulking centre and office had not commenced. The land where the physical structures would be established had been identified but construction had been delayed due to the approval of the building works by the Livingstone Town Council.

The researcher started by joining LFCS and Africa Now officials in the field to observe some of the remaining smallholder farmers training activities particularly on protection of horticulture gardens from damage by elephants using chilli fences. After observing this training, the first round of key informant interviews was conducted in March 2010 including a survey of smallholder farmers participating on the project. The survey was intended to build on the initial baseline survey and determine the status of the smallholder farmer’s participation in horticultural markets.

Quarterly assessments were then conducted to track progress in the implementation of the project noting the project outputs and outcomes. Construction of the building which housed the Farmers Green Market offices and produce storage and refrigeration facilities was concluded in April 2010 (Figure 36).



Figure 36: Farmers Green Market Building, Livingstone

The last of the interviews conducted by the Researcher was in January 2012 thus from start to finish of this research study – the researcher had monitored the project intervention for a total of 21 months.

5.4 Research Sample

The most important criterion when selecting a research sample is to increase the validity of the collected data (Carmines and Zeller, 1998; Masuku and Kirsten, 2003). In this research study, the sampling criterion was designed to increase validity rather than to ensure that the sample was representative of the wider population of produce growing smallholders. As such, the study used purposive sampling and a farmer was only interviewed if he / she had sold horticulture produce to the Farmers Green Market. Those farmers that had not established a commercial trading relationship with the Farmers

Green Market were not interviewed as they would not have been in a position to comment on the services provided.. As Masuku and Kirsten (2003) explain “purposive sampling is a deliberate non-random method of sampling which aims to sample a group of people or settings with particular characteristic such as where they live in society or specific cultural knowledge”. Purposive sampling is usually used when a limited number of individuals possess the trait of interest and therefore it is the only viable sampling technique in obtaining information from a very specific group of people. The power of purposive sampling lies in selecting information rich cases for the study (Masuku et al., 2003) that can provide significant insight into the issues being investigated by the research.

At the time of conducting this research study, a total of thirty five (35) smallholder farmers were contracted²² by the Farmers Green Market to supply assorted horticultural produce. A list of these farmers was kept by the Farmers Green Market management committee. Using this list to identify research subjects, the researcher conducted interviews with twenty seven (27) farmers who had supplied produce to the Farmers Green Market at least three times and therefore had established a trading relationship with the integrator and could comment on any services provided. As such, the sample size represented 80% of the total number of farmers contracted by the Farmers Green Market.

5.5 Data Analysis and Reporting

All hypotheses were tested using a combination of quantitative and qualitative data analysis techniques. Quantitative data analysis was done using the Statistical Package for Social Sciences (SPSS) (see George and Mallery, 2001). The results of the quantitative data analysis are provided below. In order to facilitate validation of the research findings, several consultative meetings were conducted with key project stakeholders to share with them preliminary results from the study and to identify areas that required further inquiry (Figure 37). These consultative meetings were also used to update the stakeholders of the research progress including key constraints that were faced by the study.

²²No written contracts between the Farmers Green Market and the smallholder farmers were signed. This contract was verbal.

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Figure 37: Stakeholder Consultative Workshop

The final stakeholder consultative workshop was conducted in April 2012 in Livingstone to present the final results of the study to the key stakeholders particularly the Government of Zambia – Ministry of Agriculture and Cooperatives, Livingstone Farmer's Cooperative, The Farmers Green Market management committee, Non-Governmental Organisations who facilitated the implementation of the project particularly Africa Now (AN), the International Development Enterprises (IDE) as well as private sector actors from the retail and tourism industry. The research study Director of Studies also attended this final workshop. The results validation workshop provided an opportunity to confirm the results that emerged from the study to ensure that they provided an accurate reflection of the relationship between the Farmers Green Market and the smallholder farmers. The workshop also provided further insights to explain some of the research findings as well as to identify areas that required further investigation.

5.6 Study Results

The majority of the study sample were males, aged 41-50 years, married, has primary education, and were literate. The average household size was 5-8 people. Some 7% of household heads had no education and about 11% of the households had an average household size of more than 10 people. Summary statistics of the general respondent characteristics are presented (Table 17).

Table 17: General Study Respondents Characteristics (n=27)

Characteristic	Frequency (n=27)	Percent
Gender		
Male	24	88.88
Female	3	11.11
Marital Status		
Married	25	92.59
Widowed	2	7.41
Age		
20-30 years	1	3.70
31-40 years	4	14.81
41-50 years	10	37.03
51-60 years	8	29.63
61-70 years	4	14.81
Education		
Primary	14	51.85
Secondary	9	33.33
Tertiary	2	7.41
No education	2	7.41
Ability to Read or Write		
Literate	24	88.89
Illiterate	3	11.11
Average Household Size		
Less than 5 people	5	18.51
5-8 people	17	62.96
8-10 people	2	7.41
More than 10 people	3	11.11

5.6.1 Production and Market links in the Case Study area

Just over two thirds (67%) of the sampled farmers have their production plots within a 30 kilometre radius from the Farmers Green Market while the remainder (33%) have their production plots more than 30 kilometres away from the Farmers Green Market (Table 18).

Table 18: Distance from the Farmers Green Market

Distance from Farmers Green Market	Frequency	Percent	Cumulative Percent
Less than 10 KMs	6	22.2	22.2
10 – 20 KMs	5	18.5	40.7
20 – 30 KMs	7	25.9	66.7
30 – 40 KMs	6	22.2	88.9
More than 50 KMs	3	11.1	100.0
Total	27	100.0	

Despite the relative proximity of all the sampled smallholder farmers to the Farmers Green Market, the poorly developed infrastructure and transport networks linking these communities to Livingstone town result in a considerable amount of time being spent by the growers to transport their produce to the Farmers Green Market bulking store (Table 19). Almost all the farmers were within a 50KM radius from the Farmers Green Market in Livingstone; however, almost one third of the sampled smallholder farmers indicated that it takes them more than two hours to transport their produce to the market.

Table 19: Travel time to the Farmers Green Market

Time taken to transport the produce to the Farmers Green Market	Frequency	Percent	Cumulative Percent
Less than 1 hour	14	51.9	51.9
1 – 2 hours	5	18.5	70.4
2 – 3 hours	4	14.8	85.2
3 – 4 hours	3	11.1	96.3
More than 4 hours	1	3.7	100.0
Total	27	100.0	

More than half of the sampled smallholder farmers (56%) utilise private cars to transport their produce to the Farmers Green Market, with some hitch-hiking alongside the main highway to Livingstone to get lifts (Table 20). The bicycle also was noted to be one of the main forms of transporting the produce to the market as about a quarter (26%) of the sampled growers indicated use of the bicycle as their primary method of transporting their produce. However, almost 15% still had to walk their produce to the Green Market.

Table 20: Means of transporting produce to Farmers Green Market

Main Form of transport used to ferry produce	Frequency	Percent	Cumulative Percent
Walk	4	14.8	14.8
Bicycle	7	25.9	40.7
Bus	1	3.7	44.4
Car	15	55.6	100.0
Total	27	100.0	

Labour was not a constraint to their horticultural production and marketing activities with some 70% of the sampled smallholder farmers indicated that they had enough labour (Table 21).

Table 21: Labour Availability for horticultural production and marketing

Do you have enough labour to facilitate commercial vegetable production in your household	Frequency	Percent	Cumulative Percent
Yes	19	70.4	32.1
No	8	29.6	100
Total	27	100.0	

A chi-square test of association was performed in order to determine if there was any association between adequacy of available labour and household size. Although results indicated that there was no association between household size and having enough labour to facilitate commercial horticultural production and marketing in the household (Chi-square=3.620, dof=3, p=.306), the study noted the use of various strategies employed by the sampled farmers to secure production labour such as the use of contract labour engaged at critical moments such as land preparation, planting, weeding and harvest.

The majority of the sampled smallholder farmers had recently joined the Livingstone Farmers Cooperative Society with 63% indicating they had only been members of LFCS for less than a year. The primary motive indicated by the sampled growers for joining LFCS at this point was to access the services offered by the Farmers Green Market (Table 22).

Table 22: Length of time as LFCS member

Number of Years as a Member of LFCS	Frequency	Percent	Cumulative Percent
Less than 1 Year	17	63.0	63.0
1 – 2 Years	3	11.1	74.1
2 – 3 Years	1	3.7	77.8
3 – 4 years	2	7.4	85.2
More than 4 years	4	14.8	100.0
Total	27	100.0	

Only 22% of the sampled growers had actually been members of LFCS for more than three years. This data illustrates the opportunistic behaviour of smallholder farmers as in this instance the primary motivation for joining LFCS was to secure service from the Farmers Green Market which non-members could not access. On the other hand, the data reveals the low membership retention capacity of LFCS as an organisation taking note that although LFCS had operated in Livingstone for more than ten years, 74% of the research sample had only been members for a period less than two years. This propels further questions which may require further investigation particularly around the failure by the LFCS to retain its members over time or to examine the range of services that could attract and retain new membership.

The majority of the sampled smallholder farmers (74%) indicated that they supply fresh produce to the Farmers Green Market on a weekly basis (Table 23). The weekly supply visits to the Farmers Green Market are used by smallholders to collect payments for horticultural produce that would have been supplied the previous week. Ideally, these visits should also be used to secure information on produce prices, volumes and type of crops that the Farmers Green Market would be buying in the future; however, there was no evidence of this information being provided formally or informally.

Table 23: Frequency of produce supply to the Farmers Green Market

Frequency of Produce Supply to Farmers Green Market	Frequency	Percent	Cumulative Percent
Daily	1	3.7	3.7
Weekly	21	74.1	77.8
Every two weeks	1	3.7	81.5
Once in a month	5	18.5	100.0
Total	28	100.0	

It is interesting to note that all the respondents who indicated that monthly supply of produce to the Farmers Green Market are smallholder farmers whose production plots are more than 30 kilometres from the market. These farmers reduce the frequency of

their trips to the Farmers Green Market as a strategy to minimise transport costs but it also means that payments will be delayed and there is less opportunity to gain any market intelligence that may be available at the Green Market.

The ability of 74% of the sampled farmers to supply the Farmers Green Market on a weekly basis with assorted fresh produce indicates that these farmers have acquired the relevant skills to schedule their production activities in such a manner that enables them to provide a constant supply of produce to the market. This is a key skill that the smallholder farmers need to possess to be in a position to engage effectively with contemporary high value horticultural markets as long as the Green Market itself has developed appropriate links further along the supply chain.

5.6.2 Results: Influence of market integrator on smallholder market information

The first objective of this research study was to investigate whether linking smallholder farmers to a market integrator improves their access to market information. The null-hypotheses relating to this objective are Hypotheses 1(a) – 1(c) listed below:

Hypothesis 1(a): Linking small scale commercial farmers to a produce marketing organisation (marketing integrator) has no effect in enhancing the farmer's access to information on produce food safety and quality standards required by contemporary horticulture value markets.

Hypothesis 1(b) Linking small scale commercial farmers to a produce marketing organisation (marketing integrator) has no effect in enhancing the farmer's access to information on produce prices offered by value markets.

Hypothesis 1(c) Linking small scale commercial farmers to a produce marketing organisation (marketing integrator) has no effect in enhancing the farmer's access to information on produce volumes required by target contemporary value horticultural markets.

Data was collected using a four point Likert scale where 1 was equal to strongly disagree and 4 equal to strongly agree. Three statements concerning access to market information

by smallholder farmers linked to the Produce Marketing Organisation (Farmers Green Market) were included as part of the questionnaire with participants having the option of responding that:

- a. They strongly agreed with the statement
- b. They agreed with the statement
- c. They disagreed with the statement
- d. They strongly disagreed with the statement

The interviewed smallholder farmers supplying the Green Market responded to the following three statements:

- The Farmers Green Market frequently informs me of produce food safety and quality standard requirements of target markets.
- The Farmers Green Market frequently shares with me information on produce volumes required by target markets.
- The Farmers Green Market frequently informs me of produce prices and / or fluctuations on the market.

In the design of the project “Profitable High Value and Organic Vegetable Production for Rural Producers in Southern Province, Zambia”, the Farmers Green Market was intended to become a conduit through which market information would be transmitted to the smallholder farmers who sold their produce to end markets through the Produce Marketing Organisation (marketing integrator). The assumption in the project design was that the Farmers Green Market would be able to transmit information to the participating growers relating to (a) the produce food safety and quality standards that were required by identified markets (b) the volumes of produce required by target markets as well as (c) the prices that were offered by these markets.

Chi-square for goodness of fit was used to test the null hypothesis 1(a) – 1(c) under investigation. A one sample Chi square was suitable for this measurement as the data was on an ordinal scale, categorical and does not need to assume normality. In this instance, the study respondents were requested to highlight their perception of the Farmers Green Market (produce marketing organisation) on a 4 point Likert Scale in relation to provision of related market information on produce food safety and quality standards,

produce volumes by target markets as well as the prices offered by target markets. The data analysis provided below highlights the observed frequencies for each level of perception of the Farmers Green Market by the respondents. The analysis also highlights the expected frequencies if the null hypothesis has to be true. The difference between the expected and observed frequencies is shown in the residual column and the significance tested.

5.6.2.1 Farmer Access to Food Safety & Quality Standards

Ho 1(a): Linking small scale commercial farmers to a produce marketing organisation has no effect in enhancing the farmer's access to information on produce food safety and quality standards required by contemporary horticulture value markets.

Interviewed smallholders were asked to respond to the following statement in the questionnaire: 'The Farmers Green Market frequently informs me of produce food safety and quality standard requirements of target markets'. The test statistics (Table 24) provides the actual result of the chi-square of goodness of fit.

Table 24: Test statistics results – Hypothesis 1(a)

	Observed N	Expected N	Residual
strongly agree	16	6.8	9.3
agree	5	6.8	-1.8
disagree	2	6.8	-4.8
strongly disagree	4	6.8	-2.8
Total	27		
Test Statistics			
Chi-Square	17.593 ^a		
df	3		
Asymp. Sig.	.001		
a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 6.8.			

It can be seen from the result above that the test statistic is statistically significant (Chi square (3)=17.593, $p<0.001$). Since $p<0.05$, this study rejects the null hypothesis and concludes that there are statistically significant differences between linking smallholder farmers to a Produce Marketing Organisation and the dissemination of information on produce food safety and quality standards required by contemporary horticulture value markets.

Of the respondents, 79% either strongly agreed or agreed ($n=21$) that the Farmers Green Market provided them with information on food safety and quality requirements compared to the assertions of disagreeing or strongly disagreeing.

The interviewed farmers indicated that they had either participated in at least one training or received a technical visit from an Extension Officer / Lead Farmer linked to the Farmers Green Market. Various topics were indicated to be covered during the training sessions and/or during the technical visits to the smallholder farms. These topics included:

- Varieties required by markets for various horticultural crops
- How to develop farm production plans – crop scheduling and rotation
- Correct handling, application and disposal of fertilisers
- Correct handling, application and disposal of crop protection chemicals (e.g. pesticides)
- Post-harvest management including prevention of crop contamination due to poor sanitation and inappropriate storage and transport facilities
- Record keeping
- Managing production and marketing costs for enhanced enterprise profitability.

The study respondents also confirmed that they received information on food safety and quality standards required by contemporary horticultural markets through the Farmers Green Market buying officer who was responsible for grading / sorting when produce is delivered to the Farmers Green Market. The study respondents indicated that when their produce failed to meet a certain grade or was rejected– the Buying Officer provided them with information to justify the decision. The application of food safety and quality

standards during the produce grading process at the Farmers Green Market was however noted by the study (through interviews and focus group discussions) to be a source of significant tension between the Produce Marketing Organisation and the farmers who supplied produce. It is interesting to note that all the small scale farmers whose trust score in the Farmers Green Market was 5 points and below (out of the possible 10), are farmers who reported that their produce had on more than one occasion been rejected by the buying officer at the Farmers Green Market due to disputed poor quality standards. This is discussed later; however, this observation is in agreement with the conclusions made by Muradian (2013) who argues that “meeting strict standards entails conflicts with those members that are not able to deliver the products according to specifications”. Indeed, as Muradian (2013) further argues “the exclusion of some members induces lower levels of trust between these small scale farmers and the management of the farmer’s organisation linking them to markets”. The lower levels of trust of these farmers result in lower commitment and sense of group identification which negatively affects the business performance of the Produce Marketing Organisation (ibid).

This study thus noted the dilemma faced by the Farmers Green Market in terms of meeting the social and inclusive expectations of the cooperative membership in relation to the application of food safety and quality standards. The inclusive expectations of the cooperative members were noted to pay little regard to the need for enforcement of the standards required by modern horticultural markets. Indeed, as Muradian (2013) also argues, this study noted a real risk that small scale farmers, in a cooperative, who fail to comply with the food safety and quality requirements could exert their rights in the cooperative to influence management decisions, through a democratic decision making process, which can undermine the process of standard setting as required by modern markets. Indeed, as Binjman et al (2011) argue, higher produce standards are often achieved through a more hierarchical decision making structures at the expense of democratic decisions. It is for this reason that Poulton et al (2010) conclude that the complexity of the decision making structures for cooperative managed Produce Marketing Organisations compromise their effectiveness to quickly respond to changes in buyer’s requirements.

The extension model that was operationalised by the Farmers Green Market to increase the awareness of the smallholder farmers on food safety and quality standards relied heavily on the use of Lead Farmers to convey market information to the contracted smallholder farmers (Figure 38). Each Lead Farmer was responsible for on average five other farmers within their communities who were also engaged in commercial horticultural production and marketing activities.

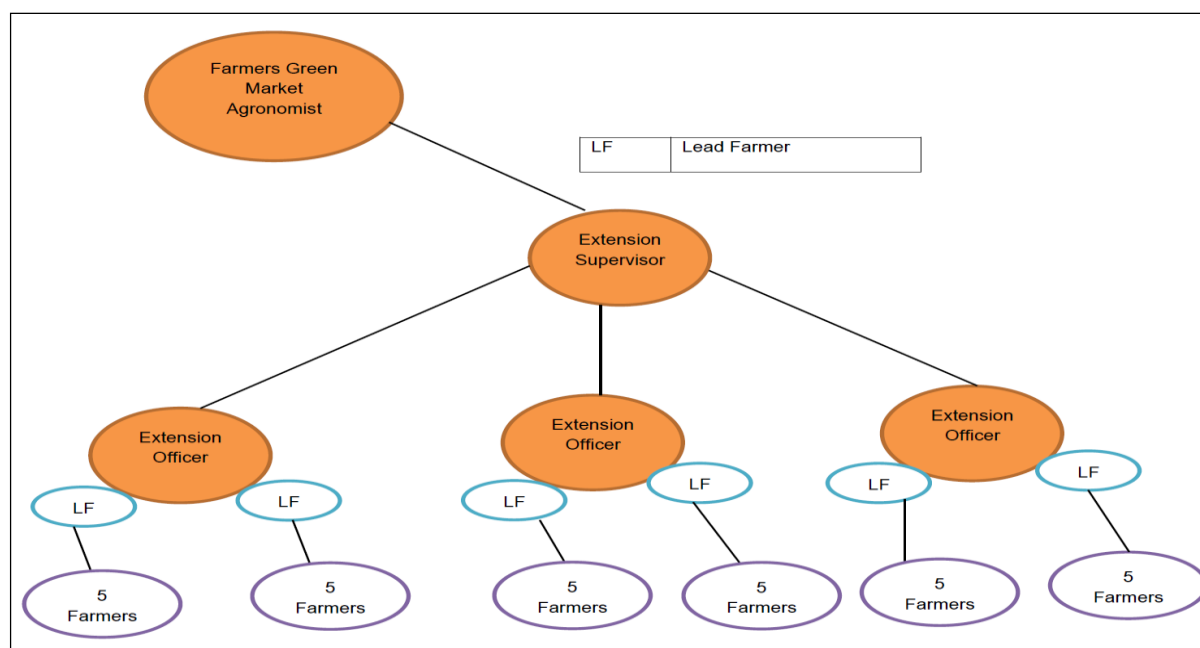


Figure 38: Farmers Green Market Extension Model

It is interesting to note that all the 16 smallholder farmers who strongly agreed with the statement that they received information on food safety and quality standards from the Farmers Green Market were linked to three Lead Farmers who had at least completed primary level education. The entire 22% of the study respondents who either strongly disagreed or disagreed that the Farmers Green Market provided them with information of food safety and quality standards were linked to two Lead Farmers who had not attended any formal education.

These study results therefore evoke questions on what is the profile required for a Lead Farmer to be able to disseminate market information on food safety and quality standards to other farmers. In this case, the study noted that no specific criteria had been applied to select the Lead Farmers in the different study locations apart from their

willingness to contribute towards extension service delivery in their communities. The farmers who indicated that they were willing to work as Lead Farmers participated in a three day training and also participated in monthly coordination meetings with the Field Extension Officers to share information on production and marketing activities in their respective communities.

5.6.2.2 Farmer information on produce prices

Hypothesis 1(b) Linking small scale commercial farmers to a produce marketing organisation has no effect in enhancing the farmer's access to information on produce prices offered by value markets.

As with the previous hypothesis, smallholders were asked to what extent they agreed or did not agree with the statement 'The Farmers Green Market frequently informs me of produce prices and /or fluctuations on the market'

It can be seen from the result (Table 25) that the test statistic is statistically significant (Chi square (3)= 11.074. The significance level is $p < 0.011$. Since $p < 0.05$, this study therefore rejects the null hypothesis and concludes that there are statistically significant differences between the expected perception and observed perception on the dissemination of information on produce market prices to the small scale commercial farmers by the Farmers Green Market.

This study therefore concludes that linking small scale farmers to a Produce Marketing Organisation such as the Farmers Green Market has a statistically significant positive effect on the farmers' access to information on produce prices offered by value horticultural markets. This conclusion is similar to the observations made by Ampaire et al (2013) who in a study on the role of rural producer organisations in enhancing market participation of smallholder farmers in Uganda noted that 94% of the sampled rural producer organisations provided market information (mainly prices).

Table 25: Test statistics results – Hypothesis 1(b)

	Observed N	Expected N	Residual
strongly agree	14	6.750	7.25
agree	4	6.750	-2.75
disagree	3	6.750	-3.75
strongly disagree	6	6.750	-0.75
Total	27		
Test Statistics			
Chi-Square	11.074		
df	3		
Asymp. Sig.	0.011		
a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 6.750			

The sampled farmers from this study indicated that they secured information on produce prices through direct interaction with the buying officer at the Farmers Green Market offices in Livingstone. In most cases - the information on market prices was secured during weekly deliveries of produce for sale to the Farmers Green Market or through telephone inquiries prior to taking the produce to the market.

A chi – square test of association was conducted to investigate if there is a relationship between smallholder farmer’s access of market information from the Farmers Green Market and their Distance from the PMO (Table 26). The results indicate that there is no statistically significant association between these variables as $\chi(1) = 22.109, p = .140$.

Table 26: Chi Square Test – Distance from PMO Versus Access to Market Information

Chi-Square Test			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	22.109 ^a	16	.140
Likelihood Ratio	23.720	16	.096
Linear-by-Linear Association	5.013	1	.025
N of Valid Cases	27		
a. 25 cells (100.0%) have expected count less than 5. The minimum expected count is .11.			

At the time of conducting this study, The Farmers Green Market did not have in place a system for sending out price information to the smallholder farmers using mobile telephone service or through its extension service system. The transaction costs related to securing price information from the Farmers Green Market were higher for the smallholder farmers who lived more than 30 KMs away from Livingstone town due to increased transport fees and other opportunity costs linked to travel times to Livingstone. This study therefore notes that while there is a statistically significant positive effect between smallholder farmers' access to information on produce prices offered by value horticultural markets and their linkage to a Produce Marketing Organisation – there is need to explore and implement cost effective methods for dissemination of market information to reduce related transaction costs. As indicated in the Chi Square results (Table 26), farmers distance away from the PMO did not affect their access to market information provided by the Farmers Green Market.

5.6.2.3 Farmer information on produce volumes

Hypothesis 1(c): Linking small scale commercial farmers to a produce marketing organisation has no effect in enhancing the farmer's access to information on produce volumes required by target contemporary value horticultural markets.

Within the questionnaire a third statement was included which asked farmers whether 'The Farmers Green Market frequently informs me of produce volumes required by target markets. The test statistics provides the actual result of the One Sample Chi-square test that was conducted (Table 27).

Table 27: Test Statistics – Hypothesis 1(c)

	Observed N	Expected N	Residual
strongly agree	7	6.750	1.25
agree	5	6.750	-1.75
disagree	8	6.750	2.75
strongly disagree	9	6.750	3.75
Total	27		
Test Statistics			
Chi-Square	3.074		
df	3		
Asymp. Sig.	0.380		
a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 6.750			

It can be seen from the result that the test statistic is not statistically significant (Chi square (3)=3.074, $p < 0.380$ Since $p > 0.05$, this study retains the null hypothesis and concludes that there are no statistically significant differences between the expected perception and actual perception on the dissemination of information on produce volumes to the farmers by Green market. This study therefore concludes that in this case study linking smallholder farmers to a Produce Marketing Organisation such as the Farmers Green Market has no effect in enhancing the farmer's access to information on produce volumes required by target contemporary value horticultural markets. In reality it became apparent from interviews with Buying Officers and through observations at the Green Market that the Market itself had no idea of expected produce volumes.

There are several ways through which a Produce Marketing Organisation such as the Farmers Green Market could secure information on produce volumes required by contemporary horticultural markets. These include:

- Through supply contracts secured from buyers. The Produce Marketing Organisation thus would advise its members of the produce volumes required by the market on the basis of the supply contract deals that it would have secured.
- Through regular professional market surveys and engagement with output markets which would allow for constant sharing of information.

This study noted that since its establishment – the Farmers Green Market had not secured a supply contract for any produce from any buyer. Instead – the Farmers Green Market purchased assorted horticultural produce from smallholder farmers, bulking the volumes and then looked for a market on the basis of the volume of produce that it would have secured from the smallholder farmers (see Figure 39).

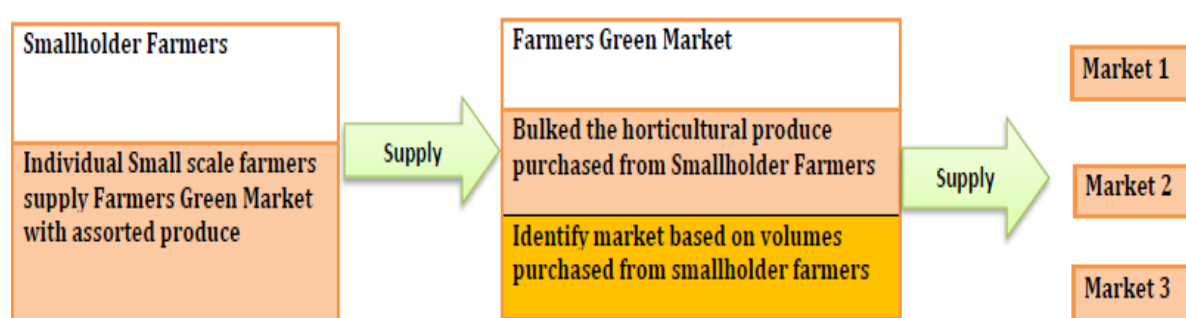


Figure 39: Farmers Green Market produce procurement and marketing strategy

The enterprise activities of the Farmers Green Market clearly lacked a solid business plan and was not proactive in identifying business opportunities. Instead it looked for markets on the basis of the produce volumes sourced from the smallholder farmers and as this takes time, the produce is likely to deteriorate. The inability of the Farmers Green Market to secure supply contracts from output markets in turn implied that the smallholder farmers could not structure their production activities in line with the output volume requirements of target markets. Empirical research suggests that market orientation is a critical aspect required for a firm's long term competitive position (Kyriakopoulos et al,

2004). Indeed, as Narver and Slater (1990) indicate, being market oriented involves being competitor oriented, strengthening ability to acquire information on competitors and customers in the target market. Such a strong business focus is a key ingredient for the sustainability of the Produce Marketing Organisation. Furthermore, Produce Marketing Organisations that are involved in strategic business alliances with other market actors have a higher chance of success as several studies have suggested that alliances provide a competitive advantage which promotes the establishment of commercial relationships with formal markets based on non-price factors and commercial efficiency (Dyer and Singh, 1998).

5.6.2.4 Key Informant Perspectives

Several constraints were identified by key informants (government officials, private sector representatives, extension officers etc) as limiting the Farmers Green Market capacity to provide information on produce volumes to smallholder farmers. These constraints are illustrated (Figure 40) and are further discussed below:

Lack of confidence in the company by other value chain actors: FreshMark (the buying arm of Shoprite) and Spar supermarkets (including several commercial hotels in Livingstone) expressed concern that they did not trust the cooperative led Produce Marketing Organisation (Farmers Green Market) that it could honour business contracts. Key informant stakeholders engaged by the study indicated that Farmers Organisations generally have a bad commercial performance record in Zambia and consequently serious business actors always exercised caution when dealing with Farmer Produce Marketing Organisations, especially those that were linked to cooperative movements. All key informant respondents from the private sector confirmed that they had concerns relating to potential political interference in the management of the PMOs both at the local and higher levels. In this respect, the interviewed higher level stakeholders indicated that it was not unusual in Zambia for well-planned business plans of Farmers Groups including Produce Marketing Organisations to become dislodged by political decisions. In addition these stakeholders expressed concern on the poor track record of most Farmers Cooperative led initiatives particularly in

relation to accountability and governance which in turn could tarnish the brand names of other value chains actors (including buyers) by virtue of association.

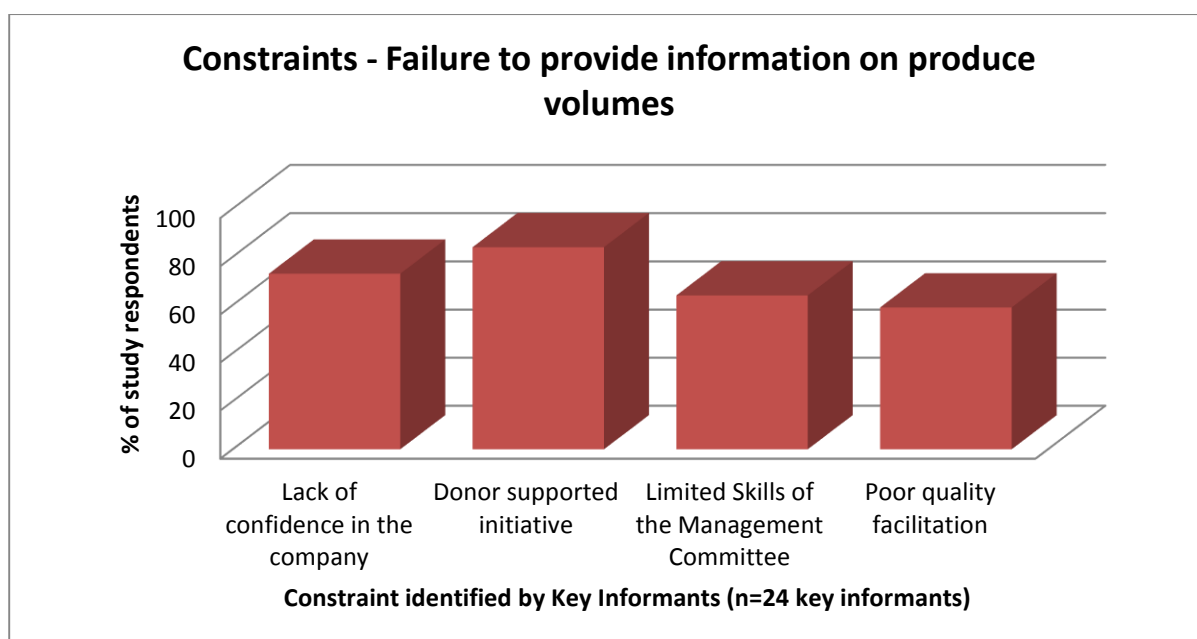


Figure 40: Farmers Green Markets constraints in providing information on produce volumes

Source Informant meetings (n=24)

Negative perception as a to donor supported initiative: Of the key informants engaged by the study, 84% expressed a lack of confidence in the Farmers Green Market due to the fact that it was a donor supported project and “like many similar initiatives supported in the past” – there was doubt that the Farmers Green Market would be able to develop into a viable sustainable commercial enterprise which could be trusted to deliver on business deals once donor funds are exhausted.

Although all the study respondents confirmed the importance of external financial support particularly during the formation process of an organisation such as the Farmers Green Market which could potentially benefit poor resource farmers – concern was expressed at the resultant external interference in the Farmers Green Market business management which in turn had a significant impact on the sustainability of the business. Taking note that all the investments that had been made by the Farmers Green Market had been financed through grant support for

the construction of the Farmers Green Market offices and bulking unit with refrigeration facilities, this situation was observed to result in a small amount of ownership as the share contribution from the farmers' cooperative members was minimal. The heavy reliance of the Farmers Green Market on external funding was perceived by other value chain actors to compromise control of the business through imposition of agendas and the potential emphasis to pursue social benefit objectives which ultimately could sometimes not always be in the best interest of the commercial objectives of the Farmers Green Market as a business.

The above concerns noted by the study are also confirmed by Rankin and Russell (2005) who argued that Produce Marketing Organisations are pushed into different directions by interested stakeholders. Stringfellow et al (1997) also warned farmers marketing organisations from engaging in too many, often over ambitious activities which compromised their primary function as private enterprises.

Limited Skills of the Farmers Green Market Management Committee: The study also noted that the human skills capacity of the Farmers Green Market Management Committee was limited in terms of its engagement strategy with other value chain actors. The Management Committee did not have a defined strategy to “pitch” the business benefits of working with the Farmers Green Market to other value chain actors. At the time of conducting this study, the Farmers Green Market had attempted several market engagement initiatives including seeking direct meetings with potential buyers and conducting market studies to identify market requirements and trends. These efforts failed to deliver the much required business deals due to a lack of a clear engagement strategy to “sell” the Farmers Green Market to the business community. The market studies conducted also were considered by this study to lack sufficient level of depth and analysis which could have helped identify a business window which the Farmers Green Market could have taken advantage of.

Poor quality facilitation from supporting institutions: The study also noted that although several Non-Governmental Organisations (particularly Africa Now) had committed to provide technical facilitation support to position the Farmers Green Market as a viable business enterprise –this technical backstopping was in most cases provided by Agronomists – who in principle were experts in agronomy and as such lacked the requisite business skills to establish and operationalise a viable enterprise. As such, critical analysis that was required and should have been done – to position the Farmers Green Market to negotiate better business deals was lacking. As an example, business financial projections, risk analysis and mitigation strategies were never conducted. The facilitation provided by the supporting institutions also did not provide clear guidance on how to “package” and market the Farmers Green Market to other value chain actors as a competent business enterprise.

These factors consequently compromised the ability of the Farmers Green Market to provide information on produce volumes required by horticultural markets. Clearly while some scholars argue that linking smallholder farmers to a Produce Marketing Organisation facilitates access to information on produce volumes required by output markets – this study argues that there is statistically significant relationship to confirm the null-hypothesis that the Produce Marketing Organisation did not affect farmers access to information on volumes of produce required by the market..

The ability of a Produce Marketing Organisation to provide information on produce volumes required by modern markets depends on a number of factors including how it is perceived by other value chain actors, the capacity of its governance structures to engage with contemporary markets to negotiate for business deals and in cases where Produce Marketing Organisations are supported by development organisations such as Non-Governmental Organisations – the quality of technical backstopping support provided is also very important in strengthening the ability of the PMO to provide credible services to its membership including information on produce volumes required by markets.

Given these results; this study makes the following conclusions relating to hypothesis 1 presented earlier (Table 28).

Table 28: Study conclusions: Hypothesis 1 (a) – 1(c)

Hypothesis	Study conclusion
Linking small scale commercial farmers to a produce marketing organisation has no effect in enhancing the farmer's access to information on produce food safety and quality standards required by contemporary horticulture value markets.	Rejected in favour of: Linking small scale commercial farmers to a produce marketing organisation enhances farmer access to information on produce food safety and quality standards required by contemporary horticulture value markets.
Linking small scale commercial farmers to a produce marketing organisation has no effect in enhancing the farmer's access to information on produce prices offered by value markets.	Rejected in favour of: Linking small scale commercial farmers to a produce marketing organisation enhances farmer access to information on produce prices offered by value markets
Linking small scale commercial farmers to a produce marketing organisation has no effect in enhancing the farmer's access to information on produce volumes required by target contemporary value horticultural markets.	Retained

5.6.3 Results: Smallholder trust in the market integrator

The second objective of this research study was to investigate whether trust between smallholder farmers and a market integrator (in this case the Green Market under LFCS) can be established through site specific investments. Within the questionnaire, smallholder farmers were requested to score their level of trust before and after the establishment of the Farmers Green Market by LFCS; in particular two questions were presented to the smallholder farmers during interviews:

- How do you rank your level of trust in Livingstone Farmer's Cooperative before the construction of the Green Market?
- How do you rank your level of trust in Livingstone Farmer's Cooperative after the construction of the Farmers Green Market

5.6.3.1 Building trust through site specific investments

Hypothesis 2a: Site specific investments made by a PMO to facilitate the provision of services to contracted growers result in an increase in the level of trust of the integrator by small scale commercial farmers.

Six of the sampled smallholder farmers had only become members of LFCS after the establishment of the Farmers Green Market and were therefore unable to score their level of trust in LFCS before the establishment of the Farmers Green Market. The analysis was therefore conducted on the basis of twenty one smallholder farmers who were able to provide their trust scores pre and post the establishment of the Farmers Green Market. The smallholder farmers ranked their level of trust on a scale of 0 – 10 where the interpretation was as described in Table 29).

Table 29: Criterion for the scoring of trust

Score Range	Key to Scoring
0 – 4	I don't trust LFCS as a market integrator where 0 is strong mistrust and 4 is weaker mistrust
5 – 6	I trust the LFCS as a market integrator but with some caution allowing a scale of caution from high (5) to lower (6)
7 – 10	I trust LFCS as a market integrator without an reservation with 7 as lower and 10 as a higher scale of trust

The scoring key (Table 29) was explained to the study respondents to ensure that they understood how to rate their level of trust of the PMO. The Wilcoxon signed-rank test was adopted to determine results from the study on the above hypothesis (see Shler Rosie., 2004).

The Wilcoxon signed-rank test is a nonparametric test equivalent to the repeated measures t-test. As the Wilcoxon signed-ranks test does not assume normality in the data, it was used for the purposes of this study as the dependent t-test was inappropriate due to issue of sampling which was not random, but convenient. It was used to compare two sets of trust scores that come from the same participants before and after the establishment of the Farmers Green Market.

The Wilcoxon signed-rank test facilitated the study investigation of change in the trust score of smallholder farmers in the market integrator from one time point to another. The Wilcoxon signed rank test was also considered appropriate for the study since the scale of measurement was ordinal and categorical. The **Ranks** table provides some interesting data on the comparison of participants' Before (Pre) and After (Post) Farmers Green Market establishment (Table 30).

Table 30: Test Results – Hypothesis 2(a)

Ranks				
		N	Mean Rank	Sum of Ranks
After the establishment of the Green market which offers cold chain services extension market information my trust in the LFA has increased - Before the establishment of the Green Market I did not trust LFA that it was committed to link farmers like me to high value fresh produce markets	Negative Ranks	9 ^a	10.17	91.50
	Positive Ranks	10 ^b	9.85	98.50
	Ties	2 ^c		
	Total	21		
Z	-.142 ^b			
Asymp. Sig. (2-tailed)	.887			
a. Wilcoxon Signed Ranks Test				
b. Based on negative ranks. Mean = 3				

We can see from the legend above that 9 participants had a higher pre-Farmers Green Market trust score than their post green market trust level score, while nearly an equal number of farmers (n=10) had a greater post green market establishment trust level score than their pre Farmers Green Market establishment trust level score. Very few, (n=2) had considered the scores for pre-green market and post-green market as equal.

By examining the **test statistics** table, a Wilcoxon signed-rank test showed that the smallholder farmers level of trust of the Produce Marketing Organisation, pre and post

the Farmers Green Market establishment, did not elicit a statistically significant change ($Z = -0.142, p = 0.887$). Indeed, median level trust score rating was 3.0 both pre and post Farmers Green Market establishment.

It is interesting to note that the smallholder farmer's level of trust in the PMO (post establishment of the Farmers Green Market) is not positively associated to the distance of these farmers from the PMO. A chi square test of association conducted revealed a statistically negative association between these variables (Chi-square=15.851, dof=3, $p=.463$).

Based on the results presented above, this study therefore makes the following conclusion (Table 31):

Table 31: Study Conclusions – Hypothesis 2(a)

Hypothesis	Study Conclusion
Site specific investments made by an agribusiness integrator to facilitate the provision of services to contracted growers result in an increase in the level of trust of the integrator by small scale commercial farmers.	Rejected in favour of: Site specific investments made by an agribusiness integrator to facilitate the provision of services to contracted growers did not result in an increase in the level of trust of the integrator by small scale commercial farmers.

The results from this study are in contrast to the arguments presented by some scholars (e.g. Kwon and Suh, 2004) who argue that site specific investments have an effect in trust building between exchange partners. 52% of the study respondents indicated that their trust of Livingstone Farmers' Cooperative had not been positively impacted by the establishment of the Farmers Green Market which involved construction of a vegetable bulking facility which refrigeration facilities to preserve quality of produce while awaiting delivery to end markets. Several factors were provided by these study respondents to explain this result:

- (a) The fact that the financial resources that were used to establish the Farmers Green Market by Livingstone Farmers' Cooperative Society were secured from a donor institution – the European Union – was indicated by the study respondents as a factor that diluted their perception of LFCS as sincere and committed to genuinely establish long term commercially sustainable working relationship with small holder farmers in the district. Since the financial resources that funded the construction of the Farmers Green Market did not directly come from LFCS financial coffers – the interviewed small holder farmers expressed doubt that LFCS had invested in the establishment of the Farmers Green Market out of the organisation's genuine commitment to work with smallholder farmers in the district. Instead, the sampled farmers expressed concern that LFCS was acting in an opportunistic manner and that the organisation would not have made such an investment out of own resources without donor support.
- (b) Capacity to effectively manage the operations of the Farmers Green Market: While 47 percent of the sampled smallholder farmers considered the establishment of on-site investments (by LFCS) through the Farmers Green Market to be a strong basis for entrenching trust in their commercial relationship – 53% of the sampled study respondents indicated that it was not enough for a market integrator to merely establish on site investments and hope that trust relationship with other markets actors would evolve. Rather – the ability of the market integrator to manage efficiently the physical investments was equally crucial to promote confidence and trust between the exchange partners. In this instance – the study respondents expressed strong doubt and lack of confidence that the Livingstone Farmers' Cooperative Society would be able to manage the onsite investments in an inclusive commercially sustainable manner. The benefits accruing from the establishment of the Farmers Green Market were therefore considered to be temporary due to lack of human capital required to effectively manage the Farmers Green Market. This view was backed up to an extent during a visit to the Green Market cool stores by the researcher and

Director of Studies where one unit was being used to store frozen meats for local clients while the other contained chilled produce, some of which were in a poor state due to the nature of packing and the time they had been in store.

In summary – the study concluded that small scale farmers in Livingstone district – considered LFCS genuine willingness to invest in onsite investments to facilitate exchange to be LOW. Without the financial support of the funding provided by the European Commission – the smallholder farmers doubted that LFCS would have invested in similar investments using own resources. The definitions of trust offered by Mayer et al (1995) and Rousseau et al (1998) both include the expectation that another party will perform a particular action competitively. As explained in Chapter 3 of this study, the competitive ability of the other party to deliver satisfactorily actions beneficial to the exchange relationships promotes reliability thus reducing the perceived risks to the relationship. The competence based trust between the smallholder farmers and LFCS was noted to be low as fifty three percent of the sampled smallholder farmers perceived LFCS as lacking the core SKILLS and attributes required to ensure that the smallholder farmers would enjoy sustainable commercial benefits arising from the establishment of the Farmers Green Market.

The reported concerns included the following factors:

- Lack of leadership and little democratic space which negatively affects participation and trust between the smallholder farmers and the Farmers Green Market Management Committee.
- Lack of clarity how the revenue / profits generated from the commercial activities of the Farmers Green Market would be ploughed back into the cooperative to benefit the wider membership. High levels of distrust were noted during the study linked to perceptions that the profits secured from the Farmers Green Market would be used to enrich individuals rather than promoting the wider general good for the benefit of the cooperative membership.
- Limited capacity to manage organisational development. The study respondents highlighted concern that the Farmers Green Market management committee did

not have qualified individuals who could steer the strategic growth of the Farmers Green Market as a business.

- Most members of the Farmers Green Market executive committee were inexperienced in dynamics of viable commercial horticultural production, pooled marketing and market linkages. Cases of poor organisation in previous efforts towards pooling the members' produce were reported.

In order to visualise how the Farmers Green Market was perceived by the majority of the sampled smallholder farmers under this study a matrix of its WILL to promote inclusive business transactions benefiting smallholder farmers (good will trust) and its SKILLS-technical ability to deliver business actions related to the exchange relationship (competence based trust) is presented (Figure 41).

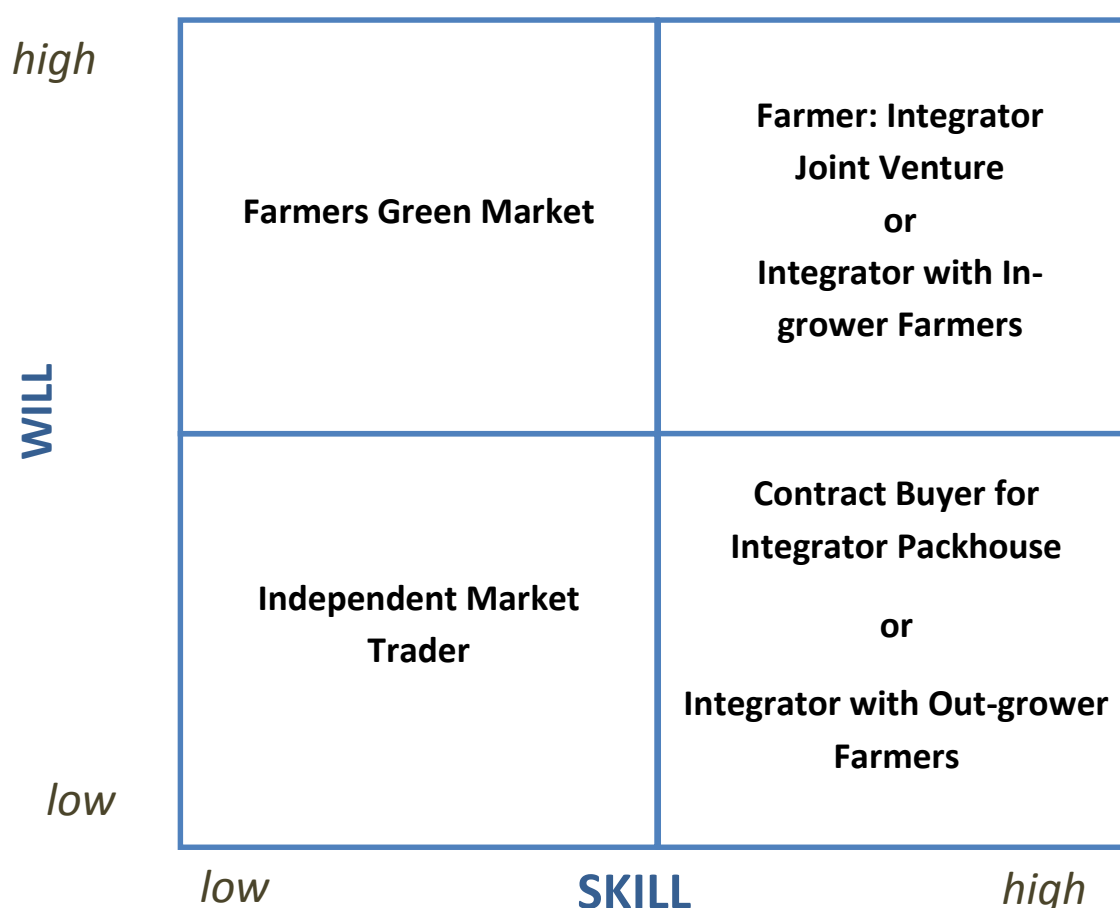


Figure 41: Farmers Green Market WILL AND SKILL ranking

Although the Farmers Green Market was perceived to have high WILL to link its members to markets, its technical SKILLS to do this was doubted even after the site specific investments that had been made. Of the interviewed growers, 84% indicated they did not believe the Farmers Green Market was able to sustain itself and grow even after the investments that had been made to strengthen the exchange relationship with the small scale farmers. These small scale farmers demonstrated doubt that the business relationship with the Farmers Green Market would be sustained for a long period and clearly this had an effect on the smallholder farmer's trust and commitment to the exchange relationship.

The Farmers Green Market position in terms of WILL and SKILL is contrasted with typical operators including local market traders, independent buyers for commercial integrators, integrators with out-grower and in-grower farmers and for joint ventures where farmers are in partnership with an integrator.

Based on these results, this study therefore argues that in this case site specific investments on their own are not enough to promote entrenchment of trust between a Produce Marketing Organisation and small scale farmers. Several other factors should be considered important including the Produce Marketing Organisation's perceived benevolence (WILL) and competence (SKILLS) to deliver exchange commitments. As was argued by John Mwanampampa – one of the Lead farmers interviewed under this study: *“site specific investments are useless unless if the integrator has the relevant skills and moral integrity to use the established resources for the general good and mutual profit of the exchange partners. It would be folly to trust an exchange partner merely because they have invested an asset in the exchange location.”*

5.6.3.2 Trust in an integrator and participation in certification programmes

Hypothesis 2b: Small scale commercial farmer's commitment to participate in certification programmes is related to their level of trust in the market integrator.

The last objective of this research study was to investigate if smallholder farmer's willingness to participate in certification programmes was related to their level of trust

of the market integrator. The assessment of this hypothesis was conducted in a two-step process:

Step 1: The smallholder farmers were requested to rank their level of trust of LIFCS as their market integrator. The trust score of LIFCS awarded by the smallholder farmers after establishment of the Farmers Green Market was used for this assessment (Table 29).

Step 2: The interviewed smallholder farmers then responded to the following statement: “I am willing to participate in certification programme(s) to facilitate compliance to the requirements of high value markets”.

Data was then collected using a four point Likert scale where 1 was equal to strongly disagree and 4 equal to strongly agree. One statement concerning smallholder farmer’s willingness to participate in certification programmes was presented on the questionnaire with participants responding that:

- a. They strongly agreed with the statement
- b. They agreed with the statement
- c. They disagreed with the statement
- d. They strongly disagreed with the statement

A spearman’s correlation coefficient was used to determine whether a relationship exists between small scale farmer’s level of trust of the market integrator and their willingness to participate in any certification programmes. The results reveal that a moderate positive correlation exists between the two variables which is statistically significant, ($r=0.36$, $p<0.008$). As such, taking note that $p<0.05$, this implies that smallholder commercial farmer’s willingness to participate in certification programmes is in some way related to their trust in the market integrator (Table 32).

Table 32: Test Results – Hypothesis 2(b)

			After the establishment of the Green market which offers cold chain services extension market information my trust in the LFA has increased	I am willing to participate in any certification program to facilitate compliance to the requirements of target high value markets
Spearman's rho	After the establishment of the Green market which offers cold chain services extension market information my trust in the LFA has increased	Correlation Coefficient	1.000	.361
		Sig. (2-tailed)	.	.008
		N	27	27
	I am willing to participate in any certification program to facilitate compliance to the requirements of target high value markets	Correlation Coefficient	.361	1.000
		Sig. (2-tailed)	.008	.
		N	27	27

The relationship between the variables was further confirmed by the Chi Square test of association conducted to analyse whether there is an association between the variables (Table 33)

Table 33: Chi Square Test Results: Hypothesis 2(b)

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	14.467 ^a	6	.025
Likelihood Ratio	12.221	6	.057
Linear-by-Linear Association	5.013	1	.025
N of Valid Cases	27		
a. 13 cells (92.9%) have expected count less than 5. The minimum expected count is .14.			

This analysis illustrates that the Chi Square value is significant ($\chi^2 = 14.467$ with 6 degrees of freedom and since the $p=0.025$ is less than 0.05); therefore there is evidence to reject the null hypothesis that there is no association between the variables (H_0). It is therefore concluded that there is an association between the willingness to participate in certification programme(s) to facilitate compliance to the requirements of high value markets and the small scale farmer's level of trust in Livingstone Farmer's Cooperative - the market integrator (Table 34).

Table 34: Study Conclusions: Hypothesis 2(b)

Hypothesis	Study Result
Small scale commercial farmer's commitment to participate in certification programmes is related to their level of trust in the market integrator.	Confirmed

Most of the previous studies evaluating certification programmes have focussed on the direct economic benefits derived by smallholder farmers from the premium price. The results from this study present an additional dimension and the argument that price premium is only one of the many elements required for the successful integration of small scale farmers in certification programmes. Trust between the exchange partners is confirmed by this study as a key element / condition for small scale farmer's willingness to enter the certification system. Rueda and Lambin (2013) in a study which reviewed the impacts of certification on Colombian small scale coffee growers observed that although high premiums were an initial motivation for farmers to participate in certification programmes (including bearing the cost for required technology upgrades, learning about the certification protocols and changing their production and marketing practices) once in the certification program farmers valued other gains which went beyond the price differentials linked to the premium. Rueda and Lambin (2013) argue that the retention of small scale farmers in a certification programme was linked to non-premium benefits which included improved access to information, technology and social networks all which strengthened their confidence and trust of the other actors involved in the exchange relationship.

The assumption that price premiums are the main motivation for smallholder farmers to participate in certification programmes should be revisited as premiums paid by the consumer are often absorbed by downstream retailers, manufacturers and other middlemen (Rueda and Lambin, 2013). In other cases – retailers may decide that the market does not allow for price premiums such as in the United States and Europe where large retailers have expanded their offering of certified products but they are unwilling to pay premium prices that would have to be passed to their customers (Rueda and Lambin, 2013). Although consumers are willing to pay a premium for certified products, the additional amount that they are willing to pay is relatively narrow – not more than 5 percent premium. A study of US consumers revealed that only 13 percent were willing to pay more than 10 percent premium (Rueda and Lambin, 2013). This therefore goes to underline that smallholder farmer's participation in certification programmes increasingly will not be linked to the promise of higher incomes but rather will be based on other attributes including market access and the trust in their working relationships with their exchange partners.

Chapter 6: Study Conclusions and Recommendations

This research has highlighted how horticultural value chains have undergone significant changes globally in the past decades. The global integration of the agricultural sector has increased the need for Agrifood markets to have increased both horizontal and vertical coordination in value chains. Both require complex information exchange not only on supply and demand but also on the quality requirements of retail customers and final consumers. As Binjman et al (2010) explain, “as the quality of the final food product is often a cumulative function of the handling activities at several stages of the value chain, upgrading quality implies coordinating those independent activities” in a manner that guarantees a coordinated innovation effort involving all actors in the value chain.

6.1 Value Chains in Africa

For Africa this need for integration is significant; not only because the continent has significant land capable of agricultural use and more specifically horticultural production, but also because most of this land is farmed by smallholders. Therefore it can be argued that both vertical and horizontal integration of supply chains is an imperative for linking smallholders to value markets. Much of this integration, especially for export markets has been articulated through private standards; however, most smallholders find these requirements difficult to meet for a range of reasons. The strategic positioning of market integrators (including PMOs) to interpret conditions of supply for the smallholders and to integrate production for the supply chain is critical to smallholder engagement in value markets.

This study has demonstrated how the need to improve smallholder farmer’s participation in contemporary markets requires trust based working relationships to be established between the producers and other value chain actors to coordinate supply and demand. In this respect, Farmers Groups, Cooperatives, Produce Marketing Organisations have all gained increased attention in the development arena as international donors, non-governmental organisations and governments all emphasise the importance of collective action as a strategy for strengthening the participation of rural small scale farmers in agribusiness value chains (William Grant, 2015). Produce Marketing Organisations are generally considered to provide small scale farmers with the benefit of economies of scale when purchasing inputs, selling outputs and increasing their bargaining power through

improved access to market information and increased power to engage with other value chain actors as a group rather than as individuals (Henson et al., 2005; Jaffee and Masakure, 2005; Sartorius and Kirsten, 2007). Indeed, as has been argued in this study, agricultural development in sub Saharan Africa cannot be achieved by side-lining smallholder farmers who account for the overwhelming majority of actors in this sector (Magingxa and Kamara, 2003; Diao and Hazell, 2004; Resnick, 2004; Barham and Chitemi, 2009). It is therefore important to ensure that sufficient knowledge is generated on how small scale farmers can be sustainably integrated into contemporary horticultural value chains especially in countries like Zambia where the increasing demand for safe and quality fresh fruit and vegetables presents viable local, regional and national market opportunities which could be embraced by development practitioners to improve the household incomes, food security and overall wellbeing of small scale farmers.

6.2 Study Aims

The main aims of this study were to evaluate those factors that conspire to make smallholder participation in value chains problematic; put simply, what do smallholders need to know about what crops to grow; the safety and quality standards demanded by the market; market prices; and, volumes/ schedules required. Given such information, smallholders can make rational decisions on what to grow, who to supply to and when to supply.

In order for integrator and smallholder relationships to develop a number of conditions need to be addressed. Two of these, namely meeting market standards and schedules and the level of trust between smallholders and the value chain were assessed in this study and the results secured from the study hypotheses are re-presented and confirmed (Table 35).

Table 35: Study Results

		Study Conclusion
Hypothesis 1(a)	Linking small scale commercial farmers to a produce marketing organisation has no effect in enhancing the farmer's access to information on produce food safety and quality standards required by contemporary horticulture value markets.	Rejected in favour of: Linking small scale commercial farmers to a produce marketing organisation enhances farmer access to information on produce food safety and quality standards required by contemporary horticulture value markets.
Hypothesis 1(b)	Linking small scale commercial farmers to a produce marketing organisation has no effect in enhancing the farmer's access to information on produce prices offered by value markets.	Rejected in favour of: Linking small scale commercial farmers to a produce marketing organisation enhances farmer access to information on produce prices offered by value markets
Hypothesis 1(c)	Linking small scale commercial farmers to a produce marketing organisation has no effect in enhancing the farmer's access to information on produce volumes required by target contemporary value horticultural markets.	Confirmed
Hypothesis 2(a)	Site specific investments made by an agribusiness integrator to facilitate the provision of services to contracted growers result in an increase in the level of trust of the integrator by small scale commercial farmers.	Rejected in favour of: Site specific investments made by an agribusiness integrator to facilitate the provision of services to contracted growers did not result in an increase in the level of trust of the integrator by small scale commercial farmers.
Hypothesis 2(b)	Small scale commercial farmer's commitment to participate in certification programmes is related to their level of trust in the market integrator.	Confirmed

Given these outcomes, the next step is to re-visit the main study objectives outlined in Chapter 1.

6.2.1 Study Objective 1:

The first objective was ‘To contribute knowledge on how farmer owned businesses (particularly cooperative managed Produce Marketing Organisations) can be strengthened to provide business development services (market information) to smallholder farmers.

Institutions such as cooperatives and Produce Marketing Organisations are an important means of linking small scale farmers with emerging high value horticultural markets. These institutions when well managed can act as a source of agricultural credit, quality inputs, technology, information, and other business development services required for enterprise development (Birthal and Joshi, 2007). The results from this study however indicate that Produce Marketing Organisations should not be all viewed as the magic bullet that will solve all the market information requirements of smallholder farmers. As confirmed by the study results, the Farmers Green Market was capable of providing smallholder farmers with market information on food safety and quality standards required by contemporary horticulture markets as well as produce prices. The Farmers Green Market was however not equally successful in transmitting to the smallholder farmers information on the produce volumes that were required by target markets. This in turn limited the ability of the Farmers Green Market to influence the production strategies that were employed by the small scale farmers who supplied it with produce.

As Mukhebi and Kundu (2014) argues, “market information is needed for small scale farmers to choose what commodities to produce, the type of technologies to apply for production, for whom to produce and when and at what price to sell”. Indeed, there is little doubt that market information also empowers the small scale farmers with increased bargaining power for a better price in the market place. Without access to market information, Mukhebi argues, “the farmers are greatly disadvantaged against middlemen and traders who often have better access to market information”. The failure by the Farmers Green Market to provide small scale farmers with information on produce volumes, as discussed in Chapter 5, arose from several factors including the failure to secure output supply contracts from potential buyers due to the latter’s lack of confidence in the management capacity of the Farmers Green Market to deliver on business deals. Farmers Cooperatives and Produce Marketing Organisations in Zambia

have had varying success in linking smallholder farmers to markets but overall these institutions are perceived with scepticism by other agribusiness actors often due to past poor performance by other similar initiatives (see Yubai, 1999) and perhaps to the stage in cooperative developments in Africa at the time (Chapter 2). The cooperative movement in Zambia has suffered from major problems with corruption and inept management. Indeed, many of the cooperatives in the country were manipulated for political purposes, often with cooperative funds being misdirected to support political campaigns at the expense of service provision to farmers (Yubai, 1999). Understandably, frustration with years of mismanagement often linked to poorly managed financial arrangements led many farmers to lose confidence in cooperative led initiatives and to strike out as lone operators. Small scale farmers engaged on the study indicated that even if working alone which reduced their market options, it shielded them from extortion and intimidation.

Other agribusiness actors in Zambia are equally aware of the challenges related to working with Farmers Cooperatives and similar Produce Marketing Organisations. The private sector representatives engaged by the study clearly indicated that they deliberately exercise increased caution when engaging with Farmers Cooperatives and related institutions such as the Farmers Green Market due to previous reputational risks. As Morgan and Hunt (1994) highlight, an exchange partner's reputation in the market has a strong positive impact on the trust-building process. Nielson (2004) further explains that "when an exchange partner is faced with a situation in which one can be taken advantage of, a natural response is to restrict one's transactions to those who have shown themselves to be trustworthy". Farmer Cooperatives and similar Produce Marketing Organisations in Zambia do not have this much required reputation as trustworthy exchange partners who can be relied upon. Although the Farmers Green Market was a new initiative, thus with no previous trading history, the fact that it was linked to Livingstone Farmers' Cooperative Society likely compromised its business standing on the market. As Nielson (2004) explains, "in the lack of prior experience with a particular partner, the next logical step is to rely on the reputation of that firm which is the direct consequence of prior relational behaviour". As such, unless if Farmers' Cooperative Associations and similar Produce Marketing Organisations in Zambia redefine how they are perceived by other value chain actors to generate a new positive brand image based

on the quality of commercial services they provide, the negative reputational perceptions generated largely from previous poor performance, particularly by farmers cooperatives (Yubai, 1999) will continue to limit their ability to fully engage with other contemporary agribusiness actors. This in turn limits the quality and scope of services they will be able to provide to smallholder farmers.

Indeed, as Nielson (2004) explains the “type of network in which a firm is embedded defines the opportunities that are potentially available to it and reputational considerations play an important role in a firm’s potential for future alliances because these social affiliations determine the firm’s perceived status and serve as a foundation for a favourable evaluation by the potential exchange partner”.

The results from this study also present questions which require further investigation on the relationship between the governance structure of a Produce Marketing Organisation and ability to provide assorted services to small holder farmers through cooperatives operating in contemporary horticultural value markets. If a Produce Marketing Organisation is to function efficiently and sustainably as a commercial enterprise, it needs to be steered by competent leadership (this is important for the establishment of competence based trust) with the right mix of business skills required to engage with the ever increasing demands of modern horticultural markets. In this instance, the management committee members of the Farmers Green Market were mainly drawn from the cooperative leadership structures not necessarily on the basis of the business skills and competence that they possessed but rather simply on the basis that they occupied a leadership role in the Livingstone Farmers’ Cooperative Society. It is the opinion of this study that this severely compromised the quality of business management decisions that were made by the Farmers Green Market Management Committee. This also compromised the quality of direct outputs from the interventions that were implemented by the Farmers Green Market including the technical robustness of market surveys conducted to try and secure information on market prices, volumes and the produce food safety and quality standards were required by target markets.

The human skills gaps were also noted in relation to how the Farmers Green Market management committee engaged and presented business propositions to other

agribusiness actors with whom the Farmers Green Market sought to establish partnerships with. No clear strategy for engagement with other value chain actors was in place. Engagement was therefore adhoc and opportunistic based on pieces of intelligence secured particularly in terms of possible output markets for the horticultural produce that were sourced by the Farmers Green Market. Perhaps Africa Now and the Livingstone Farmers' Cooperative Society should have considered outsourcing the management function of the Farmers Green Market to an entity which had the right skills set and experience in coordinating delivery of business development services required to commercialise smallholder agriculture. It is not clear why this option was never considered but these observations underline the questions presented by Temu and Temu (2006) who argue that there are several unanswered research questions that need to be addressed relating to models for the sustainable management of Produce Marketing Organisations and the costs of establishing and maintaining the desired Produce Marketing Organisation.

6.2.2 Study Objective 2

Following on from the first objective, the second objective was 'To determine if small scale farmers motivation to comply with food safety and quality standards (meeting the produce specifications required by the target markets) is related to the level of trust that they have in their working relationships with a Produce Marketing Organisation linking them to target horticultural markets'.

The results from this research study highlight that small scale farmers who trust their market integrator are committed to participate in certification programmes which entrench compliance to food safety and quality standards demanded by contemporary horticultural markets (Hypotheses 2(b); Table 35). From the literature, this study has argued that price premiums are the main motivation for smallholder farmers to participate in certification programmes. This should now be revisited as premiums paid for the increasing market demands on produce food safety and quality are diminishing. Indeed, although consumers are willing to pay a premium for certified products, the additional amount that they are willing to pay is relatively narrow and smallholder farmer's participation in certification programmes increasingly will not be linked to the promise of higher incomes but rather will be based on other attributes including access

to a market or markets but also the trust and quality of their working relationships with their exchange partners.

6.2.3 Study Objective 3:

The third objective was ‘To present recommendations that development practitioners (Governments, Non-Governmental Organisations, Donor institutions and the Private Sector) need to consider when developing interventions designed to facilitate the inclusion of small scale commercial farmers in horticulture value chains’.

The promotion of inclusive business models has been embraced positively by development practitioners (including the donor community) who consider this to be a more sustainable development strategy and an alternative to the provision of aid. Donors such as the United States Agency for International Development (USAID), the United Kingdom Department for International Development (DfID) and the Swiss Agency for Development and Cooperation (SDC) have all endorsed market systems development as an effective way to enable large numbers of poor people to achieve sustainable increases in income (Grant, 2015). As indicated in this study for instance, the European Commission provided full funding to support the integration of Zambian smallholder horticultural farmers (in the southern province) in contemporary markets. Indeed, while development cooperation has traditionally focussed on working with the public sector and civil society organisations, there is an increasing realisation that the private sector allows development agencies to reach out to more people in the fight against poverty and exclusion in carefully designed inclusive business interventions following a market systems development approach. This approach focuses on the underlying causes of the problem in a system and requires behaviour change by the actors in that system. Therefore the approach seeks to determine what is working and what is not working in a particular market sector identifying in the process the constraints from supporting infrastructure as well as rules, both formal and informal that regulates the market system (Grant, 2015; Figure 42).

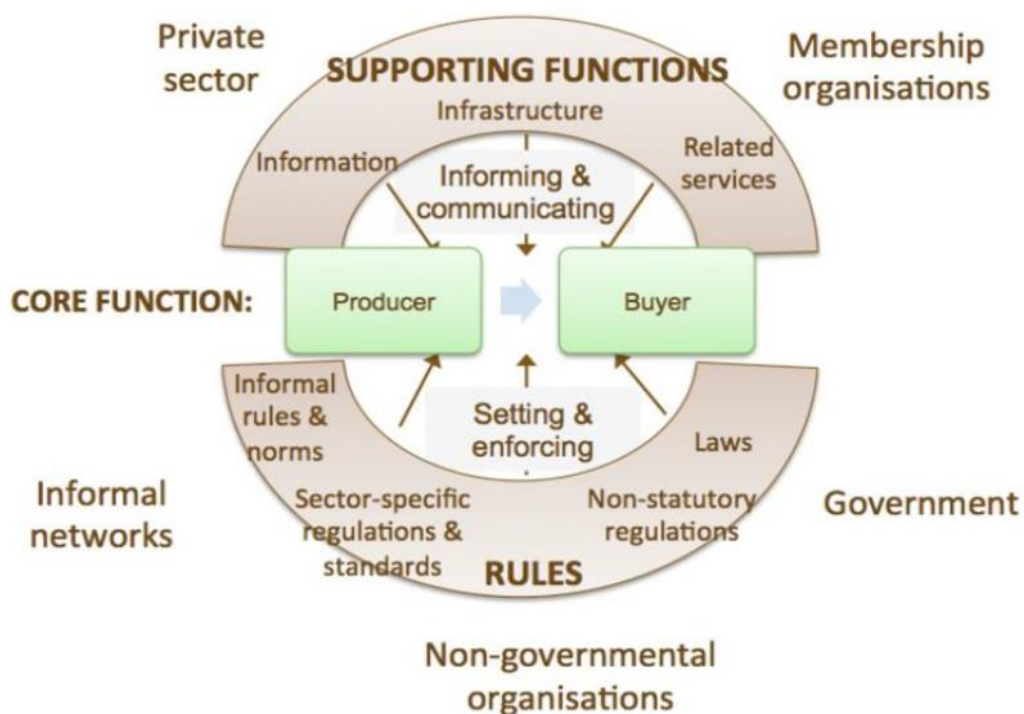


Figure 42: Market Systems Analysis

Source: Grant, 2015

The market systems development approach requires development agencies not to implement the interventions directly but to get local market actors to engage on their own behalf. This study highlights that one of the biggest risks that development agencies and donors, like Africa Now and the European Union, face relates to partner selection to facilitate the delivery of scheduled interventions. It remains unclear how Africa Now selected LFCS as a partner on this initiative. There was no evidence of any due diligence review that had been conducted to determine the Strengths, Weaknesses, Opportunities and Constraints of Africa Now partnering with LFCS to deliver the project interventions intended to promote inclusion of smallholder farmers in horticultural value chains. These processes will definitely need to be prioritised by similar projects seeking to deliver such inclusive business development interventions.

A Produce Marketing Organisation like the Farmers Green Market is a rural business. In order for it to survive, the Produce Marketing Organisation must pursue its financial sustainability as the primary objective. This study noted however the dilemma that was faced the Farmers Green Market in relation to balancing its social²³ versus the business objectives – a challenge familiar to cooperatively owned organisations. The application of food safety and quality standards during produce grading by the Farmers Green Market generated conflict and had a negative effect on how the affected smallholder farmers perceived the Farmers Green Market as an integrator. Indeed, as Binjman et al (2010) explains Cooperative Produce Marketing Organisations such as the Farmers Green Market face the “democracy dilemma” as there are limits to democratic coordination mechanisms particularly when high levels of vertical coordination are required. It was clear in this study that cooperative members were interested to sell their products to the cooperative Produce Marketing Organisation regardless of the quality. The Farmers Green Market on the other hand, in order to meet the buyer requirements, was determined to put in place a strict quality control system. It is in this respect that Binjman et al (2010) conclude that if Cooperative Produce Marketing Organisation decisions are taken democratically, there is a chance of the majority choosing to set low standards which may lead to a collective action dilemma and group failure arising from losing market opportunities and access. In the same vein, Muradian (2013) explains that the cooperative produce marketing organisation’s good social intentions often weaken or even undermine its business sustainability thus threatening its survival and potential to generate business and social benefits for its membership. While some scholars (e.g. Binjman et al 2010) have argued that strong social cohesion and trust between a Produce Marketing Organisation and the membership provides leverage in coordinating members activities through interpersonal and organisational trust (thus lowering the transactional costs), the trade-off between trust building and the application of contemporary value chain requirements by a Produce Marketing Organisation is a development topic which merits further research.

²³Donor funded initiatives like the Farmers Green Market often demand promotion of social inclusion objectives at the expense of business and commercially sustainable operations of Produce Marketing Organisations.

One of the key questions that this study sought to investigate is the importance of mutual hostage investments in building trust between a Produce Marketing Organisation and small scale farmers. Indeed, as discussed in Chapter 1 – several scholars have argued that mutual hostage investments are an important indicator in an exchange relationship to signal the moral character, benevolence and good will of an exchange partner in a transactional relationship. Batt (2003) suggests that mutual hostage investments stabilise relationships as they provide “a powerful signal to the other party of good intentions”. The results from this study however provide a contrary conclusion as investments made in this case by the Farmers Green Market which did not result in a statistically positive effect on the levels of trust of small scale farmers who were linked to the Produce Marketing Organisation. As discussed in Chapter 5, several factors were noted which explain this result including the perceived ability of the Farmers Green Market and Livingstone Farmers’ Cooperative to manage the investments that had been made. The study results indicate that the perceived competence of an exchange partner to operate the investments made for mutual benefit is a critical factor in the trust building process. Where an investment is made, but the perceived competence of the exchange partner to utilise the assets for mutual benefit is considered low, such investments have no effect on the trust level between exchange partners. This result further stresses the observations made by Morgan and Hunt (1994) who argue that the perceived partner’s technical capabilities is a critical factor in trust formation.

In a development project where a donor organisation provides the financial resources for the establishment of these investments, as the study noted, this has an effect on the trust building process as the goodwill and benevolence of the exchange partner remains doubted taking note that the financial resources utilised are considered to have been provided by an external third party and are time limited. While this study acknowledges the importance for financial support in interventions which can generate inclusive business benefits, rather than providing such support in the form of full grants, this study recommends that other models should also be considered including the option of matching funds not only as a strategy to determine the commitment of the recipient beneficiary exchange actor to implement a planned intervention but also to ensure that such external financial support does not compromise the credibility that an exchange party should have.

6.3 Recommendations

Given the above study conclusions, this study makes the following recommendations in relation to:

1. Recommendations relating to smallholder farmers
2. Recommendations relating to Produce Marketing Organisations
3. Recommendations for the Zambian Government

6.3.1 Recommendations to smallholder farmers

This study has demonstrated how small scale farmers need to strengthen their entrepreneurial skills in order to cope with the requirements of modern agribusiness markets. Unless if the small scale farmers adapt their production and marketing processes to suit the requirements of modern markets, there remains the real risk that they will be excluded from contemporary agribusiness value chains (Jaffee and Masakure, 2005; Henson et al., 2005; Sartorius and Kirsten, 2007). Indeed, as Kawa and Kaitira (2007) explain small scale farmers continue to grow crops that they have traditionally produced and continue to search for markets for these products even when the market requires improved or entirely different products. In addition, small scale farmers usually search for markets late, normally when the output has been produced. Such business practices are clearly at odds with the demands of contemporary Agri-food value chains which require increased horizontal and vertical coordination (Binjman et al 2010; Muradian, 2013).

This study therefore urges relevant development stakeholders in Zambia such as relevant government ministries, donor institutions, non-governmental organisations, educational and research institutions in the country to:

1. Develop training programs aimed at strengthening the entrepreneurial and marketing skills among agribusiness actors particularly small scale farmers, cooperative associations and similar produce marketing institutions. Developing entrepreneurial and marketing skills amongst these various actors can lead to an improvement in agricultural marketing whereby production and marketing strategies will be better aligned to meet the requirements of contemporary markets.

2. Promote private sector participation in the training of marketing actors in entrepreneurial and marketing skills
3. Promote and strengthen entrepreneurial and marketing skills in vocational training centres, colleges and other relevant learning institutions.

6.3.2 Recommendations to Produce Marketing Organisations

This research study has demonstrated how major trends in the development of Agri-food systems, such as the rising importance of produce quality and other types of standards, have increased the need for coordination along the value chain. These trends demand for more attention and investments to improve coordination mechanisms among agents of the value chain in policies and interventions aiming to improve the performance of the Zambian horticultural sector including the level of market integration of small scale farmers. Indeed, farmers groups (cooperatives, produce marketing organisations) constitute one of the coordination mechanisms available to small scale farmers as they can coordinate actions both horizontally (among members) and also vertically (with other value chain actors).

These organisations can reduce the transaction costs of conducting business through coordinated input sourcing, joint marketing and technology transfer. The Produce Marketing organisations can also improve the bargaining power of small holder farmers through for instance provision of market information which is necessary intelligence required in the bargaining process. They can also be the articulation point for private standards, if required further along the chain whilst being the mechanism for interpretation to smallholders. Despite these potential benefits that Produce Marketing Organisations can offer, this study provides caution to development practitioners that Produce Marketing Organisations are not the magic bullet capable of solving all smallholder farmers' challenges relating to access to market information. As this study has demonstrated, The Farmers Green Market was capable of providing information on produce standards required by markets as well as prices. The PMO was less successful in transmitting information on produce volumes.

This study thus makes the following recommendations to development practitioners in Zambia to enhance high quality and timely agricultural marketing information services to facilitate marketing activities involving small scale horticulture farmers:

1. Strengthen Agricultural Marketing Information Services to enhance timely, demand driven collection, analysis, storage and dissemination of marketing information.
2. Promote the use of information, communication and energy technologies by small scale farmers.
3. Strengthen Public Private Partnerships in undertaking marketing research and information systems for both input and output supply.
4. Strengthen the rebranding of Farmers Produce Marketing Organisations (particularly cooperatives) to secure the confidence and trust of other value chain actors. This rebranding process needs to consider efficient governance structures which can strengthen service delivery by PMOs to small scale farmers.
5. Strengthen the quality of technical facilitation provided by development organisations particularly Non-Governmental Organisations in enterprise development. As much as possible, Non-Governmental Organisations should identify the right personnel with the right set of skills to provide required enterprise development facilitation to ensure that the right balance between social and business objectives is secured.
6. Only seek to embed private standards into supply chains when the market demands it and ensure that compliance reaches at least to the produce marketing organisation

6.3.3 Recommendations for Zambian Government

The Zambian Government in the country's National Agricultural Policy 2004 – 2015 commits itself to “promote development of an efficient, competitive and sustainable agricultural sector, which assures food security and increased income”. This objective is linked to the government's overall goal to strengthen agricultural activities as a vehicle to “achieve poverty reduction and economic growth” including reduction of the national economic dependency on copper mining.

As discussed in Chapter 4, the Zambian Government commitment to promote the growth of the agricultural sector has not been matched by investments in physical agricultural marketing infrastructure. The marketing infrastructure currently available in the southern province of Zambia for example, remains generally poor and inadequate for the development of efficient agricultural marketing systems. The road and produce storage facilities in areas with potential for greater horticultural production like Ndele and Mambova (in Kazangula) lack the necessary facilities and this exacerbates wastage of perishable fresh horticultural produce reducing the net incomes secured by the farmers. This study therefore recommends that the Government of Zambia should improve and develop agricultural marketing infrastructure to promote more conducive conditions for the inclusion of smallholder farmers in contemporary horticultural markets. Part of this improvement in infrastructure will require both smallholder and supply chain access to finance.

6.3.3.1 Access to Finance

In order for smallholder farmers to be able to comply with the requirements of contemporary agribusiness food safety and quality requirements, initial investments in technology, infrastructure, improved inputs, extension and certification are required. Access to finance in rural Zambia is a very broad problem that development organisations are spending tens of millions of dollars trying to fix. Some of the key constraints observed during this study limiting small scale farmers to access finance are indicated (Table 36)

Table 36: Finance Supply and Demand Constraints

Supply side constraints:	Demand side constraints:
<ul style="list-style-type: none"> ▪ Banks do not want to lend due to risk aversion ▪ Risk of default is high ▪ Perceived low returns for banks on investment in smallholder farming sector; ▪ Constrained capital for banks due to investments in more profit-yielding sectors (with preference for short-term rather than long-term returns); ▪ Banks have not addressed seasonality and made offerings more applicable to smallholder clients or groups; ▪ High operational costs for financial institutions (including lack of infrastructure and a suitable distribution system) to reach farmers has led to exorbitant interest rates; ▪ Lack of information – financial institutions do not know smallholder farmers, their cycles and practices, including associations and other farmer groups – which increases moral hazard. They are, therefore, in a poor position to adapt banking methodology to smallholder target markets; ▪ Financial institutions prefer farmers to be grouped in associations or cooperatives so that they are lending to a single point that shares risk rather than the administrative burden of lending to individuals; ▪ Limited access to affordable and appropriate products; ▪ Limited guarantees/collateral available 	<ul style="list-style-type: none"> ▪ Smallholder farmers lack business skills and are poorly integrated in financial markets ▪ Lack of risk-mitigation products; ▪ Low population density in rural areas and less footfall in distribution channels; ▪ Farmers not organized (associations and cooperatives would help reduce transaction costs); ▪ Cost of credit is high, and repayment schedules are not appropriate.

This study makes the following recommendations to address the financial constraints faced by smallholder farmers and other agribusiness actors:

1. Financial institutions are encouraged to develop inclusive appropriate and affordable financial products suitable for small scale commercial farmers and other agribusiness actors.
2. The Zambian Government working closely with the private sector and other development partners are encouraged to develop and implement appropriate capacity building training services on enterprise development and management for small scale farmers and other agribusiness produce marketing organisations such as Farmers Groups and Cooperatives. This training could also include literacy training to ensure that smallholder farmers are able to keep basic records of their production and marketing activities on farm.
3. Promotion of Village Savings and Lending Associations (VSLAs): Developing commercial channels for finance is a long and slow process. This study therefore proposes that development practitioners in Zambia should promote an alternative channel for accessing funds to purchase agricultural inputs through Farmers Savings Groups. Over the last decade, Zambia has developed a broad system of VSLAs, which save small amounts of money to facilitate small on-farm investments like procurement of seed and other crop protection inputs. The success of VSLAs in the country is well documented (see for example Hendricks L, 2011) and there are established NGO promoters of the VSLA methodology which has been promoted by CARE International since 2000.

The investments required should also focus on more generic infrastructure such as the sustainable provision of energy as this is critical for both small holder farmer's production and marketing activities. As Birthal and Joshi (2007) explain there is need to invest in electrification, which is a prerequisite for production, postharvest storage, and processing of high-value commodities. Electricity is also crucial for the effective use of information technologies which have become increasingly important to secure information on agricultural extension, produce prices and volumes of produce required by target markets. The role of information and communication technologies in strengthening smallholder farmer's participation in contemporary Agrifood value chains

cannot be over emphasised. Birthal and Joshi (2007) further argue that lack of access to information is an important limitation to commercializing high-value agriculture. An uninterrupted supply of electricity and information reduces unit production and transaction costs thus improving competitiveness in production, marketing, and processing of horticultural produce. Investment in public infrastructure also triggers private investment in cold storage, refrigerated transportation, market infrastructure, and processing, which are essential to stimulate production of high-value horticultural commodities. The policy options that the Zambian Government could consider include:

1. Strengthening the mobilization of adequate resources for investment and development of agricultural marketing infrastructure in rural areas.
2. Providing incentives for the increased private sector involvement in developing and expanding agricultural marketing infrastructure such for horticultural produce storage, processing, telecommunications, marketing centres and roads.
3. Promoting community participation in the development, implementation, operation and maintenance of agricultural marketing infrastructure.

6.3.3.2 Extension Services

A common feature of public extension in Africa is the very high farmer to extension officer ratio. The Lead Farmer approach has been gaining traction as an effective way of disseminating agricultural extension services, especially where public extension officers are overwhelmed by the number of farmers needing support. This approach which involves identification and training of selected farmers in a community who then are required to pass on extension training and technical backstopping to their peers continues to be adopted mainly by donor organisations as an effective model for promoting Good Agricultural Practices (GAPs) by smallholder farmers. This study revealed that Lead Farmers who had completed primary education training were more successful in disseminating information on food safety and quality standards compared to their peers who had not received formal education. This raises the question on what are the attributes required for a Lead Farmer to be an effective extension agent? Is it enough to select a Lead Farmer merely on the basis of their willingness to provide extension services in their community? Do other attributes including the educational level of the farmer have an effect on the ability of the Lead Farmer to disseminate

information on food safety and quality standards required by contemporary markets? These questions, further defined below, require deeper investigation:

- How are Lead Farmers selected to participate on extension service delivery initiatives? Is there any specific criterion that should be used to select these Lead Farmers? Who should select these Lead Farmers?
- How are the activities of Lead Farmers monitored for quality control? How is their performance Lead Farmers assessed?
- What are the key tasks that should be conducted by Lead Farmers? How are they trained and supported? Are they better at conducting some extension services than others?
- What motivates the Lead Farmers to become involved as Extensionists including demonstration of new practices and training other farmers?
- What incentives do extension services provide and are these incentives sufficient to sustain Lead Farmers involvement?

Indeed, given the rising prominence in the use of Lead Farmers in most development projects focussing on linking small scale farmers to markets, the merits and demerits of the Lead Farmer approach needs to be better understood by development practitioners along with a greater understanding of the hard (private standards) and soft (relationships and trust) dimensions of effective value chains in operation.

Postscript: Farmers Green Market – Current status of the PMO

From 2015 – The Farmers Green Market stopped its horticultural marketing activities which involved provision of assorted business development services to smallholder farmers (provision of market information, extension, production scheduling, produce aggregation and marketing etc).

The PMO management indicated that the transactional costs involved to provide services for smallholder farmer's inclusion in horticultural markets were too high. The PMO management also lamented that they were failing to secure long term contracts from target markets which would allow for sufficient volume of produce to be traded thus generating revenue to run the business profitably. The PMO also acknowledged that the company management did not have the right level of expertise required to run a horticultural marketing business involving smallholder producers and targeting value markets.

The business has since started trading in meat products and the cold rooms that were financed by the European Union are being used for this purpose.

References

- Abrahams, C., (2010) Zambia's food system: Multiple sites of power and intersecting governances, Thesis submitted in fulfilment of PhD in African Studies, University of Edinburgh.
- Acedo A.L., Rahman, M.A., Buntong B and Gautam, D.M (2016) Establishing and managing smallholder vegetable packhouses to link farms to markets. Training Manual. AVRDC / USAID Postharvest Programme – Asia.
- Arcas-Lario N, Mínguez-Verac, A, Martín-Ugedo, J (2014) Farmers' Satisfaction with Fresh Fruit and Vegetable Marketing Spanish Cooperatives: An Explanation from Agency Theory, *International Food and Agribusiness Management Review* Volume 17 Issue 1, 2014
- Arino A., J. de la Torre and P.S. Ring (2001) Relational Quality: Managing trust in Corporate Alliances, *Californina Management Review*, 44:1, 109 -131.
- Acedo,A.C. (1997). Storage life of vegetables in simple evaporative coolers. *Tropical science* 37; 169-175.
- Adetola, A., Boubacar, B., Regassa, N., Abdul, K., and Atsu, T., (2007) Treadle Pump Irrigation and Poverty in Ghana, Research Report 117, International Water Management Institute.
- Agency for Cooperation and Research in Development (ACORD) Uganda (2010) Problems Facing Small Scale Farmers in Isingiro District, Uganda: Focus on Bananas.
- AgWater Solutions project, (2011). Improving water security through MGREGS. *Based on a report by R.P.S. Malik Colombo, Sri lanka; International Water Management Institute (IWMI)*. Agwater solutions learning and discussion brief.

Alastair, A.S.M, Nazrul, I., and Barnes, G., (1991). The treadle pump: Manual irrigation for small farmers in Bangladesh. RDRS.

Alvarez, G., (2010). Fair trade and beyond: voluntary standards and sustainable supply chains in Mena, C. And G. Stevens (eds). Delivering performance in food supply chains. Woodhead publishing limited. Cambridge.

Ampaire E. L., Machethe C. L., and Birachi, E., (2013) The role of rural producer organisations in enhancing market participation of smallholder farmers in Uganda: Enabling and Disabling Factors. Academic Journals Volume 8(11) pp 963 – 970.

Anderson J.C. and Narus, J.A., (1990). A model of distributor firm and manufacturer firm working relationships. *Journal of marketing*, 54 (January), 42-58.

Andrade, E., C., and Castro, L., I. (2007) Trust in channel relationships: Calculative, Affective, Belief and Performance, Insper Working Paper WPE 106/2007.

Antwi M and Seahlodi P. (2011) Marketing Constraints Facing Emerging Small Scale Pig Farmers in Gauteng Province, South Africa, *J. Hum Ecol*, 36(1) pp 34 -42

Arrow, K.J., (1974). The limits of organization. W. W. Norton and Company

Asfaw, N. (2009). Improving smallholder farmers' marketed supply and market access for dairy products in Arsi Zone, Ethiopia, Research Report 21. ILRI (International Livestock Research Institute), Nairobi, Kenya.

Ashley, C., and Carney, D., (1999). Sustainable livelihoods: Lessons from early experience. DFID. London.

Asian Development Bank (2006) Facilitating market integration of the upland poor into bamboo value chains: Upgrading strategies for producer groups, Making Markets Work Better for the Poor, Discussion Paper No. 5. Printed in Vietnam.

Barham, J.G.,(2007).Linking farmers to markets: assessing planned change initiatives to improve the marketing performance of smallholder farmer groups in northern Tanzania PhD Dissertation, University of Florida.

Batt, P., J. (2003), Building trust between growers and market agents. *Supply Chain Management: An International Journal*, Vol 8 (1), 65-78.

Batt, P., J. (2003). Building long term buyer-seller relationships in food chains. *Paper presented at the International Farm Management Congress, 2003. 10-15 August at Curtin University of Technology, Perth, Australia.*

Batt P., J., [no date] Building trust in the fresh produce industry Available on: anzmac.info/conference/2001/anzmac/AUTHORS/pdfs/Batt1.pdf Date Accessed: 2 February 2012. Curtin University of Technology, Australia.

Batt P., J., [no date] Building long term buyer seller relationships in food chains, Curtin University of Technology, Australia.

Batt P., J.,and Rexha, N., (2000). Trust: A determinant or the consequence of a long term buyer-seller relationship? *A paper presented for the Australian and New Zealand marketing academy conference 28.11-1.12.2000. Visionary marketing for the 21st century: Facing the challenge.*

Bandyopadhyay, S., and Tembo, G., (2009). Household management and natural resources management around national parks in Zambia. *Forthcoming in Journal of natural resources policy research.*

Banji, S., (2009) The BN supposedly improved policy on oil palm scheme. Dayak Baru. Available on: <http://dayakbaru.com/weblog08/2009/11/11/the-bnsupposedly-improved-policy-on-oil-palm-scheme/> Date Accessed [10 February 2016]

Barham James (2007) Linking farmers to markets: Assessing planned change initiatives to improve the marketing performance of smallholder farmer groups in Northern Tanzania. PhD dissertation. University of Florida.

Barham J., and Chitemi C., (2009) Collective Action initiatives to improve marketing performance: Lessons from Farmer Groups in Tanzania, *Food Policy* 53 – 59, Elsevier Limited.

Barraud-Didier, Valérie, Marie-Christine Henninger and Assâad El Akremi (2012) The relationship between members' trust and participation in the governance of cooperatives: the role of organizational commitment. *International Food and Agribusiness Management Review* 15 (1): 1–24.

Barrientos S and Visser M (2012) South African horticulture value chains: Opportunities and challenges for economic and social upgrading. Capturing the Gains Working Paper, No. 12, University of Manchester. Available at: www.capturingthegains.org [Accessed 5 June 2016].

Baxter, S. and Jack, S., (2008). Qualitative case study methodology: Study design and implementation for Novice Researchers. *The qualitative report* 13 (4), 544-559. Available Online : www.nova.edu [Accessed: 07 March, 2013]

Benard, T. And Spielman, D., J., (2009). Reaching the rural poor through rural producer organizations? A study of agricultural marketing cooperatives in Ethiopia. *Food policy* 34 (1), 60-69.

Berdegue, J., A., Bienabe, E., and Peppelenbos, L., (2008) Innovative practice in connecting small scale producers with dynamic markets, Available on: www.regoverningmarkets.org
Date Accessed: 16 March 2011.

Bernama, 2009a, Sarawak to keep enhancing NCR land development programmes. Bernama (Malaysian National News Agency), 25 May 2009. Available on:

<http://www.bernama.com/bernama/v5/newsindex.php?id=413493> Date Accessed [10 March 2015]

Bernama, 2009b, Sabah, Sarawak oil palm planters may recruit workers from China, Bangladesh and the Philippines. Bernama (Malaysian National News Agency), 20 October 2009. Available on;

www.bernama.com/bernama/v5/newsbusiness.php?id=448124 Date Accessed [10 March 2015]

Bernard T, Taffesse, A., S and Gabre-Madhin E. (2008) Impact of cooperatives on smallholder's commercialisation behaviour: Evidence from Ethiopia, *Agricultural Economics* (39) pages 147 – 161.

Bernet T, Thiele G and Zschocke T (2006) Participatory Market Chain Approach (PMCA) User Guide, International Potato Center.

Berry, L.L., and Parasuraman, A., (1991). Marketing services, Free press, New York .

Best R., Ferris S., and Schiavone A., (2005) Building Linkages and Enhancing trust between small scale rural producers, buyers in growing markets and suppliers of critical inputs. Paper presented at the conference: Beyond Agriculture: Making Markets Work for the Poor, London 28 February – 01 March 2005.

Binjman, J., Muradian, R. and A. Cechin. (2011) Agricultural cooperatives and value chain coordination: Towards an integrated theoretical framework. In Helmsing, B and Vellema, S. (eds). Value chains, inclusion and endogenous development: Contrasting theories and realities. pp 82-101. Routledge. London.

Birthal P.S and Joshi P.K (2007) Smallholder Farmers Access to Markets for High Value Agricultural Commodities in India. Cornell University, Ithaca, New York.

Bonaszak I., (2008) Determinants of successful cooperation in agricultural markets: Evidence from producer groups in Poland. *Strategy and Governance of Networks Heidelberg: Physica – Verlag.*

Borgen S (2001) Identification as a trust generating mechanism in cooperatives. *Annals of Public and Cooperative Economics* 72 (2) 209 - 228

Bornschier Vr and Volken T (2005) Trust and the disposition to change in cross national perspective: A research note, *Electronic Journal of Sociology.*

Boyce J., K., (2004) A future for small farms? Biodiversity and Sustainable Agriculture. Paper prepared for the conference on Egalitarian Development in the Era of Globalisation in Honour of Prof. Keith Griffin held at the Political Economy Research Institute, University of Massachusetts, Amherst, MA.

Boyd, G. (2005) Organisational mechanisms that best serve the poor. Caledonia and IIED, Edinburgh, UK.

Breedt, V 2009, *A farm-level economic impact analysis of food safety and quality systems in the South African mango and litchi industry*, MCom dissertation, University of Pretoria, Pretoria, viewed yymmdd<<http://upetd.up.ac.za/thesis/available/etd-12172009-162950/>

Brenkert, G.G., (2000). Trust, morality and international business in Lane, C. And Bachmann, R. (eds). *Trust within and between organizations*, 273-297. Oxford University Press. Oxford.

Bruynis, C., P.D. Goldsmith, D.E. Hahn, and W. J. Taylor (2001) "Critical Success Factors for Emerging Agricultural Marketing Cooperatives." *Journal of Cooperation*. 16 2001: 14-24.

Bush, L., Bain, C., 2004. New! Improved? The transformation of the global agri-food system. *Rural sociology*. 69 (3), 321-346.

Buck, S., (2006) The role of trust in knowledge acquisition, technology adoption and access to bank loans: Results from field experiments in the Ecuadorian Amazon, Thesis submitted to the Virginia Polytechnic Institute and State University in partial fulfilment of the requirements of Master of Science Agricultural and Applied Economics.

Caffaggi, F., 2010. New foundations of transformational private regulation WPRSCAS 2010/53. Private regulation series n. 04.

Catacutan D, Bertomeu M, Arbes L, Duque C and Butra N (2006) Collective action to which markets? ATSAL in the Philippines Paper Presented at Research Workshop on Collective Action and Market Access for Smallholders, 2-6 October 2006, Cali, Colombia

Catelo M A O and Costales A C (2008) Contract Farming and Other Market Institutions as Mechanisms for Integrating Smallholder Livestock Producers in the Growth and Development of the Livestock Sector in Developing Countries, Pro Poor Livestock Initiative, Food and Agriculture Organisation.

CEC, (2002). Regulation EC, 178/2002. Laying down general principles and requirements of food law, establishing European food safety authority and laying down procedures in matters of food safety. European commission, Brussels.

Centner T (1988) The role of cooperatives in Agriculture: Historic remnant or viable membership organisation? *Journal of Agricultural Cooperation* 479

Chambo, S. (2009) Agricultural cooperatives: Role in Food Security and Rural Development: Paper presented to expert group meeting on cooperatives. New York.

Chapoto Antony, Haggblade Steven, Hichaambwa Munguzwe, Kabwe Stephen, Longabaugh Steven, Sitko Nicholas and Tschirley David (2012) Agricultural Transformation in Zambia: Alternative institutional models for accelerating agricultural productivity growth and commercialisation. Working Paper No. 64 Indaba Agricultural Policy Research Institute, Zambia Available on:

<http://fsg.afre.msu.edu/zambia/wp64.pdf> Date Accessed [5 February 2017].

Chibanda Mutsa (2009) Institutional and governance factors influencing the performance of selected smallholder agricultural cooperatives in KwaZulu Natal South Africa. Master of Science Thesis. Available on:

http://researchspace.ukzn.ac.za/bitstream/handle/10413/562/Chibanda_Mutsa_2009.pdf?sequence=4&isAllowed=y Date Accessed [10 May 2015]

Chibonga D (2007) Linking Farmers to Markets: Prospects and Challenges Learned from NASFAM, Paper presented at an International Workshop on “Strengthening and Widening Markets and Overcoming Supply Side Constraints for African Agriculture” held at Taj Pamodzi Hotel from June 3-5, 2007 in Lusaka, Zambia.

Chikazunga D, Deall Sean, Louw Andre and Deventer Johan Van (2008) The role of fresh produce markets in South Africa, Policy Brief No. 4, Regoverning Markets.

Chipeta S., Christopolos I., and Katz E., (2008) Common Framework on Market Oriented Agricultural Advisory Services, Neuchatel Group.

Chirwa E, Dorward A, Kachule R, Kumwenda I, Kydd J, Poole N, Poulton C., and Stockbridge Ml (2005) Walking Tight Ropes: Supporting Farmer Organisations For Market Access, *Natural Resource Perspectives*, Number 99, Overseas Development Institute (ODI).

Chomba G., N., (2004) Factors affecting smallholder farmers adoption of soil and water conservation practices in Zambia, A thesis submitted to Michigan State University in partial fulfilment of the requirements for the degree of Master of Science, Department of Agricultural Economics.

Clare N, Devesh R, Julius O, Belem A, Rich, K., Amit T. (2009) Public-private partnerships and collective action in high value fruit and vegetable supply chains, *Food Policy* 34 pp 8 – 15.

Cook M (1995) The future of US agricultural Cooperatives: A neo-institutional approach. *American Journal of Agricultural Economics* 1153 – 1159

Cook M and Burrell M (2009) A cooperative life cycle framework

Cornforth C (2004) The governance of cooperatives and mutual associations: a paradox perspective. *Annals of Public and Cooperative Economics* 75(1) 11 - 32

Cotula Lorenzo (2010) Investment contracts and sustainable development Available on: <http://pubs.iied.org/pdfs/17507IIED.pdf> Date Accessed [10 April 2015]

Coulter, J., Goodland, A., Tallontire, A., and Stringfellow, R. (1999). Marrying farmer cooperation and contract farming for service provision in a liberalizing Sub-Saharan Africa, *Natural Resource Perspectives*, 48, ODI, London, UK.

Daka A E (2006) Experiences with Micro Agricultural Water Management Technologies: Zambia, Report Submitted to the International Water Management Institute, Pretoria, South Africa.

Da. Silva Carlos A and Fihlo H M. de Souza (2007) Guidelines for Rapid Appraisals of Agrifood Performance in developing countries, Agricultural Management, Marketing and Finance Occasional Paper, Food and Agriculture Organisation (FAO), Rome, Italy.

Damien F, Frédéric G and Bruno Henry de Frahan (2008) Modelling the impact of private quality standards on the fresh fruit and vegetable supply chains in developing countries, Unité d'Economie rurale, Université catholique de Louvain.

Deaton, B., J., (2004). A theoretical framework for examining the role of third party certifiers. *Food control* (December), 615-619.

David-Benz H, Andriandrambo N, Soanjara H, Chimirri C, Rahelizatovo N and Rivolala B (2016) Improving access to market information: A driver of change in marketing strategies for small producers? Available on: [http://ageconsearch.tind.io/bitstream/245073/2/David-Benz%20et%20al%20149EAAE Rennes.pdf](http://ageconsearch.tind.io/bitstream/245073/2/David-Benz%20et%20al%20149EAAE%20Rennes.pdf) Date Accessed [10 January 2017]

Davis N and Lahiff E (2011) Joint Ventures in South Africa's Land Reform Programme: Strategic Partnerships or Strategic Resource Grab? Paper presented at the International Conference on Global Land Grabbing 6 -8 April 2011, IDS University of Sussex.

De Koning, M. and de Steenhuijsen Piters, B., (2009) Farmers as Shareholders: A Close Look at Recent Experience. Amsterdam, KIT, Bulletin 390.

Department for International Development (DfID) (1999) Sustainable Livelihoods Guidance Sheets. Available on:
<http://www.eldis.org/vfile/upload/1/document/0901/section2.pdf> Date Accessed [19 February 2013]

Devaux Andre, Valasco Claudio, Lopez Gaston, Bernet Thomas, Ordinola Miguel, Pico Hernan, Thiele Graham and Horton Douglas (2006) Collective Action for Innovation and Small Farmer Market Access: The Papa Andina Experience, Capri Working Paper No. 68.

Develtere Patrick, Pollet Ignance and Wanyama Fredrick (2008) Cooperating out of poverty: The renaissance of the African cooperative movement. Paper commissioned by the International Labour Office and the World Bank Institute. Available on http://www.ilo.org/public/english/employment/ent/coop/africa/download/coop_out_of_poverty.pdf Date Accessed [10 November 2016]

Diao, X. And Hazell, P., (2004). Exploring market opportunities for African smallholders, 2020 Brief. International Food Policy Research Institute.

Doney, P. M., and Cannon, J. P., (1997). An examination of the nature of trust in buyer-seller relationships. *Journal of marketing* 61 (2), 35-51.

Dorward A and Kachule R (2005) Farmers Organisations for market access in Malawi. Paper presented at stakeholders workshop on farmers organisations for market access in Malawi, February, Lilongwe.

Doward, A., Kydd, J., Morrison, J. And Poulton, C., (2003). Institutions, markets and economic coordination: Linking development policy to theory and praxis. *Development change* 36 (1), 1-25. Blackwell publishing, Oxford.

Dyer, J., H., (1997) Effective inter-firm collaboration: how firms minimize transaction costs and maximize transaction value. *Strategic management journal* 18(7), 535-556.

Dyer J. H., and Chu, W., (2002) The role of trustworthiness in reducing transaction costs and improving performance: Empirical evidence from the United States, Japan and Korea, Sloan Foundation International Motor Vehicle Programme and Seoul National University, Institute of Management of Research.

Dyer J. H. and Chu W. (1997) The economic value of trust in supplier – buyer relations, Paper presented at the academy of management meetings in Boston MA, August 13.

Dyer J.H. and Singh H (1998) The relational view: Cooperative strategy and sources of inter-organisational competitive advantage. *Academy of Management Review* 23 (4) 660 - 679

Eaton, C. and A.W. Shepherd (2001) Contract farming: Partnerships for growth. FAO Agricultural Services Bulletin 145. Rome, Italy.

Eccles, J., (1989). Evolution of the brain: Creation of the self. Routledge, London.

Ellram, L.M., and Cooper, M.C., (1990). Supply chain management, partnerships and the shipper – 3rd party relationships. *The international journal of logistics management* 1(2), 1-10.

Endeva and HERi Madagascar (2015) Inclusive Agribusiness: Review and Synthesis of 7 case studies in Madagascar. Available on: http://www.endeva.org/wp-content/uploads/2015/12/inclusive-agribusiness_finalversion.pdf Date Accessed [10 January 2017]

European Union (2014) National Indicative Programme (2014 – 2020) Available on: http://ec.europa.eu/europeaid/sites/devco/files/nip-zambia-edf11-2014_en.pdf Date Accessed [16 May 2015]

Eskola E. (2005) Agricultural Marketing and Supply Chain Management in Tanzania: A case study. ESRF study on globalisation and East Africa Economies, Working Paper Series No. 16.

FAO, (2013) Annual Report on FAO's projects and activities in support of producer organizations and cooperatives. Rome, FAO.

FAO, (1986). Improvement of post harvest fresh fruits and vegetables handling: A manual. UNFAO regional office for Asia and the Pacific. Bangkok.

Francesconi, G. N., and Ruerd, R., (2007) Impacts of Collective Action on Smallholders Commercialisation: Evidence from Dairy in Ethiopia, Paper prepared for presentation at the I Mediterranean Conference of Agro-Food Social Scientists. 103rd EAAE Seminar 'Adding Value to the Agro-Food Supply Chain in the Future Euromediterranean Space'. Barcelona, Spain, April 23rd - 25th, 2007.

Fernandez A., (2010) Wildlife Conservation in Zambia: Impact of Game Management Areas on Household Welfare. Thesis submitted to Michigan State University in partial fulfilment of the requirements for the Degree of Master of Science Agricultural Economics.

Fernandez Ana (2010) Wildlife Conservation in Zambia: Impact of game management areas on household welfare. MSc Agricultural Economics thesis. Michigan State University.

Ferray M., (2003) Trust and social capital in the regulation of lending activities, *Journal of Socio – Economics* (31) pp 673 – 699.

Ferris Shaun, Robbins Peter, Best Pupert, Seville Don, Buxton Abbi, Shriver Jefferson and Wei Emily (2014) Linking smallholder farmers to markets and the implications for extension and advisory services. MEAS discussion Paper No. 4 Available on:

<http://www.value-chains.org/dyn/bds/docs/871/MEAS%20Discussion%20Paper%204%20-%20Linking%20Farmers%20to%20Mar.pdf> Date Accessed: [26 July 2016].

Fischer E., and Qaim M., (2011) Smallholder Farmers and Collective Action: What determines the intensity of participation? Paper prepared for presentation at the EAAE 2011 Congress (Change and Uncertainty – Challenges for Agriculture, Food and Natural Resources) August 30 – September 2, 2011 Zurich, Switzerland.

Fukuyama, F., (1995). Trust ; Social virtues and the creation of prosperity. Free press. New York.

Fulponi, L., 2006. Private voluntary standards in the food system: the perspective of major food retailers in the OECD countries, *Food policy*, 31, 1-13.

Fulton M (1999) Cooperatives and member commitment *LTA* 4(99) 418 - 437

Fulton M and Giannakas K (2001) Organisational commitment in mixed oligopoly: Agricultural cooperatives and investor owned firms. *American Journal of Agricultural Economics* 83 (5) 1258 - 1265

Ganesan, S., (1994). Determinants of long term orientation in buyer-seller relationships. *Journal of marketing*, 58 (April), 1-19.

Ganguly U (2013) Contract farming: Can it be a vehicle for inclusive growth? Review and synthesis of various case studies on contract farming in India. Available on: <http://www.vlsa.gsl.org/sites/default/files/gla/document/Final%20Report-CF%20%202013.pdf> Date Accessed [10 March 2017]

GAPI (2015) IKURU Available on: <http://gapi.co.mz/o-que-fazemos/mercado-alvo/ikuru/> Date Accessed [7 September 2016]

Gardner, J. and Cooper, M., (1988). Elements of strategic partnership in J.McKeon (ed) Partnerships, a natural evolution in logistics. Logistics Resources Inc.

George D., and Mallery P., (2001) SPSS for Windows Step by Step. Available on: <http://wps.ablongman.com/wps/media/objects/385/394732/george4answers.pdf>

Date Accessed: 12 January 2014.

Gereffi, G., Garcia-Johnson, R., and Sasser, E., (2001). The NGO-industrial complex, *Foreign policy*, 125, 56-65.

Getnet Kindie and Annullo Tsegaye (2012) *Agricultural Cooperatives and Rural Livelihoods: Evidence from Ethiopia*. Annals of Public and Cooperative Economics Volume 83 Issue 2 pp 181 - 198

Geyskens, I. and Steenkamp, J.B., (1995). An investigation into the joint effects of trust and interdependencies on relationship and commitment. *Actes de la conference l'EMAC*, 24 ed. M. Bergadaa, ESSEC, Cergy-pontoise, 351-371.

Geyskens, I., Steenkamp, J.B., and Kumar, N., (1998). Generalizations about trust in marketing channel relationships using meta analysis. *International journal of research in marketing*. 15, 223-248.

Global Finance Magazine (2015) Zambia GDP and Economic Data Available on: <https://www.gfmag.com/global-data/country-data/zambia-gdp-country-report> Date

Accessed: 10 June 2015

Glover, D. and K. Kusterer (1990) Small Farmers, Big Business: Contract Farming and Rural Development. New York: St. Martin's Press.

Gibbon, P., and Lazaro, E., (2010). Agro-foods, standards and Africa: an introduction. Gibbon, P., Ponte, S. And Lazaro, E., (eds.) Global Agro-foods trades and standards Basingstoke, Macmillan, Palgrave.

Gibbon, P., Ponte, S. And Lazaro, E., 2010. Global agro-food trade and standards: challenges for Africa. International political economy series. Palgrave Macmillan.

Giel T., (2008) Challenges for smallholder market access: A review of literature on institutional arrangements in collective marketing, Agricultural Economics Research Institute, LEI Wageningen UR, Wageningen, The Netherlands.

GIZ (2013) Contract Farming Handbook: A practical guide for linking small scale producers and buyers through business model innovation. Volume II (Selected tools and case examples) Available on:

<https://www.giz.de/fachexpertise/downloads/Fachexpertise/2015giz-en-cf-handbook-volume2.pdf> Date Accessed [10 March 2016].

Goeb J., C., (2011) Impacts of government maize supports on smallholder cotton production in Zambia, A thesis submitted to Michigan State University in partial fulfilment of the requirements for the degree of Master of Science, Department of Agricultural, Food and Resource Economics.

Gow, H., and Shanoyan, A., (2008) Designing Appropriate Market Linkage Programs for Small Farmers: Are Cooperatives and Private Channels Complements or Substitutes? Paper prepared for presentation at the International Seminar on pathways to rural economic development in transition countries: The role of agricultural cooperatives, September 5-6, 2008, Yerevan, Armenia.

Government of the Republic of Zambia (2011) The National Agriculture Policy [Final Draft] Available on: [file:///C:/Users/User/Downloads/Zambia%20-%20Nat%20Ag%20Policy%202012%20to%202030%20DRAFT-2011%20\(1\).pdf](file:///C:/Users/User/Downloads/Zambia%20-%20Nat%20Ag%20Policy%202012%20to%202030%20DRAFT-2011%20(1).pdf) Date Accessed [10 September 2016]

Government of the Republic of Zambia, Central Statistics Office (2011) Zambia 2010 Census of Population and Housing Report. Available on: <https://unstats.un.org/unsd/demographic/sources/census/wphc/Zambia/PreliminaryReport.pdf> Date Accessed [10 June 2016]

Government of the Republic of Zimbabwe (2007) Indigenisation and Economic Empowerment Act. Available on

<http://www.eisourcebook.org/cms/January%202016/Zimbabwe%20Indigenisation%20and%20Economic%20Empowerment%20Act.pdf> Date Accessed [10 June 2016]

Graffham, A., and MacGregor, J., 2008. Impact of EuropeGAP on smallscale vegetable growers in Zambia. Paper prepared for the smallscale producers and standards in agri-food supply chains project, phase 2.

Granatstein D, Mullinix K and Hogue E [no date] Mulching systems for weed control, water conservation and Nitrogen Management in Organic Apple Orchards, Washington State University.

Grant William (2015) Market Systems Development: A primer on pro poor programming. Available on <http://dai-global-developments.com/articles/market-systems-development-a-primer-on-pro-poor-programming/> Date Accessed: 20 September 2015

Gradl, C., C. Kükenshöner, J. Schmidt, and C.S. de Martínez (2012) Growing Business with Smallholders: A Guide to Inclusive Agribusiness. Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH. Bonn and Eschborn, Germany.

Greenburg, S., (2009) Thinking beyond share equity schemes in land reform: how about going small? The South African Civil Society Information Service, 22 September 2009. <http://www.sacsis.org.za/site/News/detail> Date Accessed[10 June 2016]

Gulati R., and Nickerson J., A., (2008) Inter-organisational trust, governance choice and exchange performance, *Organization Science*, INFORMS.

Gundlach G. T., and Cannon J. P., (2009) Trust but verify? The performance implications of verification strategies in trusting relationships, *Journal of the Acad. Mark Sci*, Springer.

Guo, H., R.W. Jolly, and J. Zhu (2007) Contract Farming in China: Perspectives of Farm Households and Agribusiness Firms. *Comparative Economic Studies* 49 (2):285.

Gyau A., and Spiller A., (2007) The role of organisational culture in modelling buyer – seller relationships in the fresh fruit and vegetable trade between Ghana and Europe, *African Journal of Business Management* Vol 1(8) pp 218 – 229.

Haile M, Kalkuhl M and Usman M (2015) Market information and smallholder farmer price expectations. *African Journal of Agricultural and Resource Economics* Volume 10 Number 4 pp 297 - 311

Hancock, D. R., and Algozzine, B., (2006). Doing case study research, a practical guide for beginning researchers. Teachers college press. New York.

Hansen, M.,H.,Morrow,J.L., and Batista,J.,C., (2002). The impact of trust on cooperative membership retention, performance and satisfaction- an exploratory study. *International food and agribusiness management review*, 5, 41-59. Available online:www.ifama.org [Accessed: 27-01-2013]

Hardin G., (1968) The Tragedy of the Commons, *Science*, New Series Volume 162 pages 1243 – 1248.

Harris, R, & J. Carman (1983) Public regulation of marketing activity: Part 1: Institutional typologies of market failure, *Journal of Macro marketing*, Spring, pp 49-58

Hatanaka Maki, Bain Carmen and Busch Lawrence (2005) Third Party Certification in the Global Agri-food System, *Food Policy* 30 pp 354 – 369

Heidi, J. B. And John, G., (1992). Do norms matter in marketing relationships? *Journal of marketing* (56), (april), 32-44.

Hellin, J., Lundy M., and Meijer M., (2007) Farmer Organisation, Collective Action and Market Access in Meso America, Capri Working Paper No. 67.

Hendricks L (2011) Village Savings and Loans: A pathway to financial inclusion for Africa's poorest households. Global Microcredit Summit Commissioned Paper, November 14 – 17 2011, Valladolid, Spain

Henson, S., and Humphrey J., (2009). The impacts of private food safety standards on the food chain and on public standard setting processes, Paper prepared for Food and Agriculture Organisation (FAO) and the World Health Organisation (WHO)

Henson, S., and Masakure, O., 2005. Private food safety and quality standards for fresh produce exporters: the case of Hortico agrisystems, Zimbabwe. *Food policy* 30 (4), 371-384. Available online: www.sciencedirect.com [Accessed: 30-01-2013]

Henson, S., and Reardon, T., 2005. Private agri-food standards: implications for food policy and the agri-food system. *Food policy* 30 (24), 1-253.

Henson, S., Jaffee, S., Cranfield, J., Blandon, J., and Siegel, P. (2008). Linking African smallholder to high value markets: practitioner perspectives on benefits, constraints and interventions. International food economy research group (INFERG), Working paper number 5.

Henson, J.M., Redman, R.S., Rodriguez, R. J., and Stout, R., 2005. Fungi on Yellowstone's geothermal soils and plants. *Yellowstone Sci.* 13 : 25-30

Hernandez R, (2009) Supermarkets, Wholesalers and Tomato Growers in Guatemala, A thesis submitted to Michigan State University in partial fulfilment of the requirements for the degree of Master of Science, Agricultural, Food and Resource Economics.

Hichaambwa, M.,(2010). Structure of the Lusaka fresh produce market. *An AgWater solutions project case study report*. International water management institute. (IWMI). Lusaka, Zambia.

Hichaambwa M. [no date] Developments in the horticultural supply chains in Zambia, Global Horticultural Initiative video conference on Post Harvest and Transport

Technologies: Reducing Losses and Improving Quality in Fruits and Vegetables in Eastern and Southern Africa.

Hichaambwa Munguzwe, Chamberlin Jordan and Kabwe Stephen (2015) Is smallholder horticulture the unfunded poverty reduction option in Zambia? A comparative assessment of welfare effects of participation in Horticultural and Maize Markets. Indaba Agricultural Policy Research Institute Working Paper 96 Available on: <http://ageconsearch.tind.io/bitstream/207022/2/wp96.pdf> Date Accessed [10 April 2016]

Hichaambwa, M. And Tschirley, D., (2006). Horticultural rapid appraisal: understanding Zambia's domestic value chains. *Food Security Research Project Working Paper Number 18*. Lusaka, Zambia

Higgins, v., Diibden,J.,and Cocklin, C., 2008. Building alternative agri-food networks: certification, embeddedness and agrienvironmental governance. *Journal of rural studies*, 24, 15-27.

Hind, Abigail M. 1998. Assessment of cooperative performance. The World of Cooperative Enterprise, UK: Scottish Agricultural Organisation Society, 9–18.

Holmen H. (1990) State, Cooperatives and Development in Africa, The Scandinavian Institute of African Studies, Uppsala.

Hrebiniak, L.G., (1974). Effects of job level and participation on employee attitudes and perceptions of influence. *Academy of trust journal* (17), 649-662.

Hudson T and Krause M (2014) Leasing and share farming land fact sheet Available on: https://www.google.co.mz/search?sclient=psy-ab&biw=1366&bih=662&noj=1&q=Hudson+and+Krause+%282014%29++Leasing+Land&oq=Hudson+and+Krause+%282014%29++Leasing+Land&gs_l=serp.3..33i21k1j33i160k1l2.5496.9218.1.9768.14.12.0.0.0.0.337.1537.2-5j1.6.0....0...1c.1j2.64.serp..8.2.596.l2wuptavhpQ Date Accessed [10 July 2016]

Huei-Huang Kuan and Gee-Woo Bock [no date] *The Collective Reality of Trust: An Investigation of Social Relations and Networks on Trust in Multi Channel Retailers*, University Of Singapore.

Humphrey, J., 2006. The supermarket revolution in developing countries: tidal wave or tough competitive struggle? *Journal of economic geography* 7(4), 337-340. Oxford university press, Oxford.

Humphrey, J. And Schmitz, H.,1998. Trust and inter-firm relations in developing and transition economies. *The Journal of development studies*, 34 (4), 32-61.

IIED, (Voley, B, and Fox, T.) (2004) global food chains- constraints and opportunities for smallholder farmers. A paper prepared for the OECD DAC POVNET Agriculture and pro-poor growth task team at the Helsinki workshop 17-18 june, 2004.

International Cooperative Alliance (2015) *Guidance Notes to the Cooperative Principles*. Available on:
<http://www.ica-ap.coop/sites/ica-ap.coop/files/Guidance%20Notes%20EN.pdf> Date
Accessed [10 May 2016]

International Federation of Agricultural Producers (IFAP), 2002. Representing farmers globally. A case study prepared by Bhatnagar, D., Dewan, A., Torres, M.M. and Kanungo, P. for the World Bank, Washington D.C. Available online: www.un.org [Accessed: 30-01-2013].

International Institute for Environment and Development, (2005). Achieving fairness in trading between supermarkets and their agrifood supply chains. UK food group briefing prepared by Tallontire, A. and Vorley, B. In September, 2005. London. Available online: www.ukfg.org.uk. [Accessed 30-01-2013].

International Trade Centre (2015) *Trade Map: trade statistics for international business development*. Available on:

[http://www.trademap.org/\(X\(1\)S\(ly1dx055degaydupjs5bmiiz\)\)/Product_SelCountry_TS.aspx?nvpm=1|894||||TOTAL|||2|1|1|1|2|1|1|1|1](http://www.trademap.org/(X(1)S(ly1dx055degaydupjs5bmiiz))/Product_SelCountry_TS.aspx?nvpm=1|894||||TOTAL|||2|1|1|1|2|1|1|1|1) Date Accessed [2 February 2016]

Iowa State University (2014) Farm Leasing Arrangements Available on: <http://www.extension.iastate.edu/feci/Leasing/FLA14Inb.pdf> Date Accessed [10 March 2015]

Jaffee, S., and Masakure, O., (2005). Strategic use of private standards to enhance international competitiveness: vegetable exports from Kenya and elsewhere. *Food policy*, 30, 316-333.

Jere, Z. D., and Banderson, N.,T., (2004). An extension approach to scale up adoption of smallscale irrigation technology, in J.J. Mangisoni (ed). Proceedings of smallscale experience and lesson sharing workshop on smallscale irrigation and market development. Malawi institute of management, Lilongwe, 36-41.

Johnson, D. And Grayson, K., (1998). Sources and dimension of trust in service relationships. *A working paper for London business school number 98-503 (August)*.

Kabuga C. (2005), Cooperative Tradition in Anglophone Countries, Essential Research for a Cooperative Facility, ILO, Geneva, Mimeo.

Kawa I.H. and Kaitira L.M (2007) Enhancing smallholder farmers market competitiveness in Tanzania, Cornell University, Ithaca, New York.

Kay, M., and Brabben, T., (2000), Treadle Pumps for Irrigation in Africa, International Programme for Technology and Research in Irrigation and Drainage (IPTRID), Knowledge synthesis report No. 1.

Keeling J., Carter C and Sexton R (2004) Lessons in cooperative failure: The Rice Growers Association Experience. *ARE Update* 7(3) 1-5

Kirsten, J., and Sartorius, (2002). Farm agribusiness linkages in South Africa: empowering disadvantaged communities through links with agribusiness. *Working paper 2002-11*. University of Pretoria, South Africa.

Kirsten, J., and Sartorius, (2004). Linking agribusiness and smallscale farmers in developing countries: is there a new role for contract farming? *Development southern Africa* 19 (40 October. Carfax publishing, taylor and francis group.

Klemperer, P. D., (1995). Competition when consumers have switching costs. *Review of economic studies*, 62, 515-539.

Knack, S. And Keefer, P., (1996). Does social capital have an economic payoff? A cross country investigation. *The quarterly Journal of economics* 112 (4). Available online: www.ppge.ufrgs.br [Accessed: 28-01-2013]

Kodomaya, S., (2011) Agricultural Policies and Food Security of smallholder farmers in Zambia, *African Study Monographs*, Supplementary 42 pp 19 – 39

Kohn, L.T., (1997). Methods in case study analysis. The centre for studying health system change, technical publication number 2. Washington D.C.

Krantz, L., (2001). The sustainable livelihood approach to poverty reduction. Swedish international development cooperation agency. Division for policy and socio-economic analysis. Available online: www.forestry.umn.edu [Accessed 27-01-2013]

Kwapong, N. A., & Korugyendo, P. L. (2010). Revival of agricultural cooperatives in Uganda. International Food Policy Research Institute Policy Note (10).

Kwon I-W., G. and Suh T. (2004) Factors affecting the level of trust and commitment in supply chain relationships, *Journal of Supply Chain Management* 40 (2), 4-14. Emerald Group Publishing Limited. United Kingdom.

Kyriakopoulos, Kyriakos and Moorman, Christine., (2004) Tradeoffs in Marketing Exploitation and Exploration Strategies: The Overlooked Role of Market Orientation, *International Journal of Research in Marketing*, 21, 219-240.

Lahiff, E (2007) Business Models in Land Reform. Research Report 27. Programme for Land and Agrarian Studies, University of Western Cape, Cape Town: South Africa.

Lane, C. A and Bachmann, R.,(1996). The social constitution of supplier relations in Britain and Germany. *Organization studies*, 17 (3), 365-395.

Lane, C., (2000). Introduction: Theories and issues in the study of trust. In C. Lane and R. Bachmann, (eds). *Trust within and between organizations: conceptual issues and empirical applications*. Oxford university press. Oxford.

Lasley, P. C. Phillip Baumel, Ronald Deiter, Pat Hipple, (1997) Strengthening Ethics Within Agricultural Cooperatives. Available on:

<https://www.rd.usda.gov/files/rr151.pdf> Date Accessed [10 March 2016]

Lerman, Z., & Parliament, C. (1991). Size and industry effects in the performance of agricultural cooperatives. *Agricultural Economics*, Volume 6, Issue 1, pp. 15-29.

Lourenzani Ana Elisa Bressan Smith and Andrea Lago da Silva (2009) Horizontal Cooperation and Market Access, Paper presented at the VII International PENSA Conference November, 26-28th, 2009 - Sao Paulo, Brazil

Lovgren A., (2012) How can assistance programs create value for entrepreneurs? A grounded theory case study of the Michigan State University Product Centre for Agricultural and Natural Resources.

Lu, H., Feng, S., Trienekens, J., H., and Omta, S.W.F.O., (2008). Performance in vegetable supply chains: The role of Guanxi networks and buyer-seller relationships. *Agribusiness* 24 (2), 253-274. Spring.

Lubell M., [no date] Trust and cooperation in watershed management, Russell Sage Foundation.

Lundy, M., Ostertag, C., and Best, R., (2002). Value adding agroenterprise and poverty reduction: A territorial approach for rural business environment. *Paper presented at the globalization of agricultural research conference in Turriaba*. Costa Rica.

Lyatuu E; Lebotse L; Msuta G and Marope M (2009) Marketing of Indigenous Leafy Vegetables (ILVs) and how small scale farmer income can be improved in the SADC region (Tanzania, Zambia and Botswana), Regional Workshop Report, Arusha, Tanzania.

Impett E.A; Beals K.P and Peplau L.A. (2001) Testing the Investment Model of Relationship Commitment and Stability in Longitudinal Study of Married Couples *Current Psychology* Winter 2001 – 02 Volume 20, No.4 pages 312 – 326.

MacDuffie J. P., (2005) Collaboration in supply chains: With and Without trust, Wharton School, University of Pennsylvania.

MacNeil, I. R., (1980). The new social contract, an inquiry into modern contractual relations, New haven C.T: Yale university press, Yale.

Maertens, M., Dries, L., Dedehouanou, F.A. and Swinnen, J.F.M., (2007). High value supply chains, food standards and rural households in Senegal in Swinnen, J.F.M. (ed). *Global supply chains, standards and the poor*. CABI, UK.

Maginxa, L., L. And Kamara, A.B., (2003). Institutional perspectives of enhancing smallholder access in south Africa. *Paper presented at the 41st annual conference of agricultural economics association of South Africa (AEASA)*, Pretoria, South Africa.

Magesa M, Michael K and Ko J (2015) Towards a framework for accessing agricultural market information. *EJISDC* (2015) 66, 3, pp 1 -16

Majid Cooke, F. (2002) Vulnerability, Control and Oil Palm in Sarawak: Globalization and a New Era? *Development and Change*, Volume 33 (2): 189 – 211.

Manfredo, RM., Richards, TJ, McDermott, S. (2003), 'Agricultural Cooperatives and Risk Management: Impact on Financial Performance' Paperprepared presentation at the American Agricultural Economics Association Annual Meeting Montreal, Canada.

Mangisoni J., (2006) Markets, Institutions and Agricultural Performance in Africa, ATPS Special Paper Series No. 27, African Technology Policy Studies Network, Nairobi, Kenya

Maitre d'Hôtel E, Lemeilleur S and Bienabé E (2011) Linking Smallholders to Efficient Markets: Background Paper presented at the 3rd European Forum on Rural Development Palencia, Spain 29 March – 1 April 2011

Markelova, H., and Meinzen-Dick R., (2009) Collective Action for Smallholder Market Access, Capri Policy Brief Number 6. *Food Policy* 34, 1-7. Available online: www.sciencedirect.com [Accessed 28-01-2013]

Markelova,H., Meinzen -Dick, R., Hellin, J. and Dohrn, S., (2009). Collective action for smallholder market access. *Food policy* 34: 1-7. In a special issues on Collective action for smallholder market access

Marshall, M.N., (1996). Sampling for qualitative research. *Family practice*, 13; 522-525 Oxford university press.

Marsland, N.; Wilson, I.M.; Abeyasekera, S. and Kleih, U.K. (2000) A Methodological Framework for Combining Quantitative and Qualitative Survey Methods, Reading: Statistical Services Centre, University of Reading, UK

Martinez, M., G., and Banados, F., (2004). Impact of E.U. organic product certification legislation on Chile organic exports. *Food policy* 29(1), 1-14.

Masuku, M.B., Kirsten, J.F., Van Rooyen, C.J. & Perret, S. (2003) Contractual relationships between smallholder sugarcane growers and millers in the sugar industry supply chain in Swaziland. *Agrekon*, 42(3): 183-199

Mataa, M. And Hichaambwa, M., (undated). Smallholders involvement in commercial agriculture/ horticulture in Zambia. A Zambia National Position Paper presented at video conference on High Value Agriculture in Eastern and Southern Africa.

Maxwell, S., (2004). Launching the DFID consultation. New directions for agriculture in reducing poverty. Department for international development. Available: www.dfid-agriculture-consultation.nri.org [Accessed: 30-01-2013]

Mayer, R.C., and Davis, J.H. and Schoorman, F.D., (1995). An integration model of organizational trust. *Academy of management review*. 20 (3). 709-734.

Mayson David (2003) Evaluating Land and Agrarian Reform in South Africa. Available on: <http://www.plaas.org.za/sites/default/files/publications-pdf/ELARSA%2007.pdf> Date Accessed [10 August 2016]

McIndoe-Calder Tara (2012) Models of Agricultural Investment. Available on: <http://www.dochas.ie/Shared/Files/4/dochas-agricultural-investment.pdf> Date Accessed [10 March 2016]

Meinzen-Dick, H. Markelova, J. Hellin and S. Dohrn. Food policy 34: 1-118. Available online: www.sciencedirect.com [Accessed: 30-01-2013].

Metcalfe S.C., (2006) Communal Land Reform in Zambia: Governance, Livelihood and Conservation. MPhil thesis. University of Western Cape.

McNeil M., R., (2001) The impact of adult death on rural smallholders in Kenya: Implications for HIV AIDS, A Plan B paper submitted to Michigan State University in partial fulfilment of the requirements for the degree of Master of Science of Agricultural Economics.

Miehlbradt A. O., and McVay M., (2006) Implementing Sustainable Private Sector Development: Striving for Tangible Results for the Poor, Paper presented at the Annual BDS Seminar (2006), International Training Centre of the International Labour Organization.

Minot, N. (2007) Contract Farming in Developing Countries: Patterns, Impact, and Policy Implications. Case Study #6-3 of the Program: "Food Policy for Developing Countries: The Role of Government in the Global Food System". Ithaca: Cornell University, New York

Minot, N. And Hill, R.V., (2007). Developing and connecting markets for poor farmers 2020 focus brief on the World's poor and hungry people. IFPRI. Washington D.C.

Mintern, B., Randrianarison, L., Swinnen, J.F.M., (2006). Global retail chains and poor farmers: evidence from Madagascar. *A discussion paper 164/2006 for LICOS Centre for transition economics*. Available online: www.econ.kuleuven.be/licos.com [Accessed: 30-01-2013]

Mishra, K.E., Spreitzer, G., M., and Mishra, A., K., (1998). Preserving employee morale during downsizing. *Sloan Management Review* 39(2) 83-95.

Miyata S. and Hu D., (2007). Impact of Contract Farming on Income : Linking Small Farmers, Packers and Supermarkets in China, International Food Policy Research Institute (IFPRI) Discussion Paper 00742.

Morgan R. M. and Hunt S., D., (1994) The Commitment – Trust Theory of Relationship Marketing, *Journal of Marketing*, 58 (3), 20 – 38. Academic Journals Inc., USA

Moonga Kalonga (1999) The development of tourism in Livingstone District 1945 – 1991. MSc Thesis. Available on:
<http://dspace.unza.zm:8080/xmlui/bitstream/handle/123456789/700/Moonga%2CK.0001.PDF?sequence=1&isAllowed=y> Date Accessed [10 June 2014].

Moorman, C. Deshpande, R. And Zaltman, G., (1992). Relationships between providers and users of marketing research: the dynamics of trust within and between organizations. *Journal of marketing research* 29 (August), 314-329.

Moorman, C. Deshpande, R. And Zaltman, G., (1993). Factors affecting trust in marketing research relationships. *Journal of marketing* 57 (January), 81-101.

Moyo T., (2010) Determinants of participation of smallholder farmers in the marketing of small grains and strategies for improving their participation in the Limpopo River Basin of Zimbabwe, Thesis submitted in partial fulfilment of the requirements of MSc Agric (Agricultural Economics), University of Pretoria.

Mukhebi A and Kundu J (2014) Linking farmers to markets in Kenya: The evolving KACE model. Available on:

<http://revues.cirad.fr/index.php/cahiers-agricultures/article/viewFile/31096/30856>

Date Accessed [10 May 2015]

Mumba Maxwell, Mwanamambo Brian, Mwale Moses, Sichivula Isaac and Musamba (2015) Horticulture Sub Sector Report: Mapping Investment Opportunities in the Horticulture sub sector: The case of vegetable value chains in Zambia. Available on http://agriprofocus.com/upload/post/FinalReport_Horticulture_Subsector_Zambia1452255681.pdf Date Accessed: 20 March 2016.

Munyeche N, Story S, Baines R.N and Davies W.P (2011) Linking small scale African growers to value markets: Development of a co-owned produce marketing organisation as the standards holder. *Acta Horticulturae* (ISHS) 895:185-192 Available on: http://www.actahort.org/members/showpdf?booknrarnr=895_23

Muradian R. (2013). 'Payments for Ecosystem Services as Incentives for Collective Action'. *Society and Natural Resources*, 26 (10): 1155-1169.

Musitini Tawedzerwa (2012) Farming as a Family Business Training Manual. Available on: http://pdf.usaid.gov/pdf_docs/PA00JRZQ.pdf Date Accessed [13 August 2016]. Study

Commissioned by the Zimbabwe Agriculture Competitiveness Programme and funded by the United States Agency for International Development and Cooperation (USAID).

Mtonga Emeldah Mbobela (2012) Cooperatives and Market Access in Zambia.

Discussion Paper. Available on: <http://www.fes-zambia.org/media/publications/Cooperatives%20and%20Market%20access%20in%20Zambia.pdf> Date Accessed [10 June 2016]

Mwanamambo B. N., (2008) Financing Smallholder Agribusiness in Zambia: An economic analysis of the ZATAC model, Thesis submitted to the Office of Graduate Studies of Texas, A&M University in partial fulfilment of the requirements for the degree of Master of Science Agricultural Economics.

Mwanaumo A. (1999) Agricultural Marketing Policy Reforms in Zambia: Paper presented at the workshop on Agricultural Transformation in Africa, June 27 – 30 1999, Nairobi, Kenya Funded by the United States Agency for International Development.

Mwansa Stephen (2015) Investing in Zambia's tourism sector. Paper presented at the UK – Zambia Trade and Investment Forum, 4 November 2015, London

Mwiinga, M., (2009). [An Assessment of Tomato Price Variability in Lusaka and its Effects on Smallholder Farmers](#). *Master of Science Thesis*.

Nadvi, K., and Waltring, E., C.,(2004). Making sense of the global standards. H. Schmitz (eds). Local enterprises in the global economy; issues of governance and upgrading. Edward elgar, Cheltenham.

Nannyonjo Justine (2013) Enabling Agricultural Cooperatives through Public Policy and the State: The case of Uganda. Paper prepared for the UNRISD Conference “Potential and Limits of Social and Solidarity Economy” conducted on the 6 - 8 May 2013, Geneva, Switzerland. Available on <http://www.unrisd.org/sse-nannyonjo> [Accessed 12 February 2017]

Narver, J. & Slater, S. (1990) "The Effect of a Market Orientation on Business Performance". *Journal of Marketing* 5(3)pp20-35

Ndukwu, M.C., (2011). Development of a low cost Mud evaporative cooler of fruits and vegetables. *Agricultural Engineering International CIGR Journal* 1781, 13 (1)

Neto B and Bachmann R (2016) The role of trust in cooperative organisations life cycle. Paper presented at the International Summit of Cooperatives, Quebec. Available on: https://www.sommetinter.coop/fr/cdn/farfuture/ijFPCGvAc50Yw3Olzgvv7AfRZiODvEsX4ZCc_hXT_Q/mtime%3A1475861974/sites/default/files/article-scientifique/files/document_joint_0556.pdf Date Accessed [10 December 2016]

Nenguwo Ngoni (2004) Increasing the value and quality assurance for the fresh vegetables and herbs supply chain to Sun International hotels in Zambia. Feasibility study. Report prepared for Rapid project RCSA.

Nguz, K., (2005). Assessing food safety systems in sub Saharan countries: An overview of key issues. Available online: www.infolib.hua.edu.vn. [Accessed: 30-01-2013]

Nilsson, J., Kihlén, A., and Norell, L. (2009). Are traditional cooperatives an endangered species? About shrinking satisfaction, involvement and trust. *International Food and Agribusiness Management Review*, 12(4).

Nkhoma Agnes Towera (2011) Factors affecting sustainability of agricultural cooperatives: Lessons from Malawi. Master of AgriCommerce thesis. Available on: http://mro.massey.ac.nz/bitstream/handle/10179/2889/01_front.pdf?sequence=2 Date Accessed [10 June 2015].

Nielson Bernhard Bo (2004) The role of trust in collaborative relationships: A multi-dimensional approach. Available on: http://www.cairn.info/zen.php?ID_ARTICLE=MANA_073_0239 [Accessed: 12-06-15]

Nyikahadzoi K, Siziba S, Sagary N, Njuki J, and Adekunle A.A (2011) Promoting Effective Collective Marketing in the Context of Integrated Agricultural Research for Development in Sub Saharan Africa, Learning Publics *Journal of Agriculture and Environmental Studies* Vol 2 (1) pp 82- 97

Nyoro J and Ngugi I., (2007) A qualitative analysis of success and failure factors of agricultural cooperatives in Central Kenya. *Decentralisation and the social economics of development: Lessons from Kenya*, 13

Ortmann G.F and King R.P (2007) Agricultural cooperatives II: Can they facilitate access of small-scale farmers in South Africa to input and product markets?, *Agrekon*, Volume 46, No 2 (June).

Osterberg, P., & Nilsson, J. (2009). Members' perception of their participation in the governance of cooperatives: The "key to trust and commitment in agricultural cooperatives. *Agribusiness*, 25, 181–197.

Paglitti Lisa and Sabrie Roble (2013) Review of smallholder linkages for inclusive agribusiness development. Published under the FAO / World Bank Cooperative Programme, Rome. Available on: <http://www.fao.org/docrep/019/i3404e/i3404e.pdf> Date Accessed [6 July 2016]

Paine K.D., (2003) Guidelines for Measuring Trust in Organizations. Published by the Institute for Public Relations

Parkhe, A., (1993). Strategic alliance structuring: A game theoretic approach and transaction cost examination of interfirm cooperation. *The academy of management journal*, 36 (4), 794-829.

Parthasarathy D and Chopde V.K. [no date] Building social capital: Collective Action, Adoption of Agricultural Innovations and poverty reduction in the Indian Semi Arid Tropics, Indian Institute of Technology, Bombay, India.

Patel A. M., and Everett J. L., (2004) Making a difference in principal – agent relationships: The role of mass media as producers of trust. Paper presented at the conference proceedings Making a difference: Australian and New Zealand Communication Association Conference, pp 1 -13, Sydney NSW

Peterson I. M. B. A., (2006) Trust and technology adoption in Australian agribusiness supply chains: A gap analysis approach, Dissertation submitted in partial fulfilment of the award of Doctor of Business Administration, University of Southern Queensland.

Pinto, A. C. (2009). Agricultural Cooperatives and Farmers Organizations - Role in Rural Development and Poverty Reduction. Agricord, Swedish Cooperative Centre, UN - Department of Economic and Social Affairs (DESA). Available on:

<http://www.un.org/esa/socdev/egms/docs/2009/cooperatives/Pinto.pdf>

Date Accessed [10 February 2016]

Poirier, C. C., (1999). Advanced Supply chain management: How to build a sustained competitive advantage. Berrett-Koehler publishers, San Francisco.

Poulton, C., Dorward, A., Kydd, J., Poole, N. and Smith, L. (1998). A New Institutional Economics Perspective on Current Policy Debates.

Poulton, C., Dorward, A. and J. Kydd (2010) The Future of Small Farms: New Directions for Services, Institutions, and Intermediation. World Development 38: 1413–1428.

Puspitawati, E., (2011). Determinants of trust in the Indonesian potato industry: a comparison amongst groups of potato farmers. A paper presented at the 55th conference on February 8-11, 2011. In Melbourne, Australia from the Australian agricultural and resources economics society. Available on www.econpapers.repec.org. [Accessed:31-01-2013].

Putnam, R. D., (1993). Making democracy work. Civic traditions in modern Italy, Princeton university press. Princeton.

Pratt, M. G. (1998). To be or not to be? Central questions in organizational identification. In D.A. Whetten, & P. C. Godfrey (Eds.), *Identity in organizations: Developing theory through conversations* (pp. 171–207). Thousand Oaks, CA: Sage.

Rabade, L., A., and Alfaro, J.A., 2006. Buyer supplier relationships influence on traceability implementation on the vegetable industry. *Journal of purchasing and supply management*. 12 (1), 39-50.

Rankin, M. K., & Russell, I. (2005). Building Sustainable Farmer Cooperatives in the Mekong Delta. Is Social Capital the Key? Vietnam

Reuben, R., Boekel, M.V., Tilburg, A.V., Trinekens, J. Eds., (2007). *Tropical food chains-governance regimes for quality management*. Wageningen Academic Publishers, Netherlands.

Robbins P, Bikande F, Ferris S, Kleih U, Okoboi G, and Wandschneider T [no date] Manual 4: The Territorial Approach to Rural Agro-enterprise Development.

Reardon T, Pingali P and Stamoulis K (2006) Impacts of Agri-food Market Transformation during Globalization on the Poor's Rural Nonfarm Employment: Lessons for Rural Business Development Programs, Staff Paper 2006-25, Department of Agricultural Economics Michigan State University East Lansing, Michigan 48824

Reina D. S., and Reina M. L., (2007) Building Sustainable Trust, *OD Practitioner*, 39 (1).

Rempel, J.K., Holmes J.G. and Zanna, M.P. (1985). Trust in close relationships. *Journal of personality and social psychology*. 49. 95-112.

Resnick, D., (2004). Smallholder African agriculture: Progress and problems in confronting hunger and poverty. *DSGD Discussion paper number 9*. International Food Policy Research Institute, Washington D.C.

Rhodes R (2007) Understanding governance: ten years on. *Organisation Studies* 28 (8) 1243

Ring, P. S., and Van De Ven, (1992). Structuring cooperative relationship between organizations. *Strategic management journal*. 13, 483-98.

Robbins P, Bikande F, Ferris S, Hodges R, Kleih U, Okoboi G and Wandschneider T (2004) Advice Manual for the Organisation of Collective Marketing Activities by Small-Scale Farmers, The University of Greenwich.

Rotter, J. B., (1967). A new scale for the measurement of interpersonal trust. *Journal of personality* (35), 651-665.

Roy, S.K., (1989). A low cost cool chamber: an innovative technology for developing countries (Tropical fruits storage) Johnson ,G.I., (Common wealth scientific and industrial research organization, St. Lucia,(Australia). Division of Horticulture). Post harvest handling of tropical fruits, Canberra (ed), A.C.T. Australian center for international agricultural research 1994, 393-5.

Royer J (1999) Cooperative organisational strategies: A neo-institutional digest. *J. Cooperatives*, 14: 44-67

Rueda, X., and E. F. Lambin. 2013. Linking globalization to local land uses: how eco-consumers and gourmands are changing the Colombian coffee landscapes. *World Development* 41:286-301.

Ruete Marina (2014) Inclusive Investment in Agriculture: Cooperatives and the role of foreign investment. Available on:

<https://www.iisd.org/sites/default/files/publications/inclusive-investment-in-agriculture-en.pdf> Date Accessed [13 July 2016]

Rusbult C. E., Martz J. M., and Agnew C. R., (1998) The investment model scale: Measuring commitment level, satisfaction level, quality of alternatives and investment size, *Personal Relationships* (5) pp 357 – 391, United States of America.

Sako, M., (1991). The role of trust in Japanese buyer-supplier relationships. *Ricerche Economiche XLV*. 2(3), 449-474.

Sako, M., (1992). Price, quality and trust in inter-firm relations in Britain and Japan. Cambridge University Press, Cambridge.

Sako, M., (1997). Does trust improve business performance? In *trust within and between organizations: conceptual issues and empirical applications*, Lane, C. And Bachmann, R., (eds). Oxford university press, Oxford.

Sartorius K., and Kirsten J., (2002) Can smallholder farmers be linked to Agribusiness? The timber experience. *Agrekon* Volume 41 Issue 4

Sartorius K., and Kirsten J., (2006) Contracts and contract farming as potential mechanisms to improve market access for black farmers in South Africa, Department of Agricultural Economics, Extension and Rural Development, University of Pretoria, South Africa.

Sartorius K., and Kirsten J., (2007). A framework to facilitate institutional arrangements for smallholder supply in developing countries: an agribusiness perspective. *Food policy*. 2007 doi 10.1016/foodpol.2007.03.001

Schillhorn van Veen, T.W., (2003). The world bank and pest management. In: Maredia, K., M., Dakauo, D., Mota-Sanchez, D., (eds). *Integrated pest management in the global arena*. CABI, Wallingford, UK.

Schulze, B., Wocken, C. And Spiller A., (2006). Relationship quality in agri-food chains: supplier management in the German pork and dairy sector. *Journal of chain and network science* 6(1), 55-68.

Schwettmann J. (2014) The Role of Cooperatives in Achieving the Sustainable Development Goals – the Economic Dimension; Geneva: ILO (a Contribution to the UN DESA Expert Group Meeting and Workshop on Cooperatives The Role of Cooperatives in

Sustainable Development for All: Contributions, challenges and Strategies, 8 – 10 December 2014, Nairobi, Kenya

Seabright P. (1997) Is cooperation habit forming? The Environment and emerging development issues 2 pp 283 - 307

Selnez, F., 1998. Antecedents and consequences of trust and satisfaction in buyer-seller relationships. *European journal of marketing* 32. 305-322.

Sergeant, A. and Sewadeh, M., (2006). Current status of Zambia's agricultural exports. *A working paper prepared for the World Bank.*

Sherman, S., (1992). Are strategic alliances working? *Fortune* (September), 77-78.

Shepherd, A.W., (2005). The implications of supermarket development for horticultural farmers and traditional marketing systems in Asia. *Paper presented to the FAO/AFMA/FAMA Regional workshop on the growth of supermarkets as retailers of fresh produce*, Kuala Lumpur.

Shiferaw B, Obare G, Muricho G and Silim S (2009) Leveraging institutions for collective action to improve markets for smallholder producers in less-favored areas, *Afjare* Vol 3 No 1 (March).

Shigetomi, S., (1992) "From "Loosely" to "Tightly" Structured Social Organization: The Changing Aspects of Cooperation and Village Community in Rural Thailand" *The Developing Economics*. 30(2): 154-178.

Shler Rosie (2004) Statistics: 2.2 The Wilcoxon signed rank sum test. Available on: <http://www.statstutor.ac.uk/resources/uploaded/wilcoxonsignedranktest.pdf> Date Accessed [10 March 2013]

Siegel, Paul B. (2008) Profile of Zambia's Smallholders: Where and Who are the Potential Beneficiaries of Agricultural Commercialization? Africa Region Working Paper Series No. 113, World Bank, June, pp. 11-12.

Sindi J. K., (2008) Kenya's domestic horticulture subsector: What drives commercialisation decisions by rural households, thesis submitted to Michigan State University in partial fulfilment of the requirements for the degree of Master of Science.

Sitko Nicholas, Chapoto Anthony, Kabwe Steven, Tembo Solomon, Hichaambwa Munguzwe, Lubinda Rebecca, Chiwawa Harrison, Mataa Mebelo, Heck Simon and Nthani Dorothy (2011) Technical Compendium: Descriptive Agricultural Statistics and Analysis for Zambia in support of USAID Mission's Feed the Future Strategic Review. Food Security Research Project Working Paper No. 52, Lusaka, Zambia

Soon, J. M., & Baines, R. N. (2011). Farm food safety and diseases risk assessments: Case studies from the horticultural and salmonid farms. *Journal of Risk Research*. Advance online publication. doi:10.1080/13669877.2011.634518

Spekman, R.E., (1988). Perceptions of strategic vulnerability among industrial buyers and its effect on information search and supply evaluation. *Journal of business research* 17 (4), 313-327.

Springfield Centre (2015) The operational guide for making markets work for the poor (M4P) approach. Available on: <http://www.enterprise-development.org/wp-content/uploads/m4pguide2015.pdf> Date Accessed [10 May 2016]

Staatz J., (1989) Farmer Cooperative Theory. *Recent Developments* ACS Research Report No. 84 (May). Washington, D.C.: U.S. Department of Agriculture, Agricultural Cooperative Service.

Stake, R.E., (1995). The art of case study research. Sage publications. Thousand Oaks, California.

Stephen, E.S., (2006) Model for NCR land in Sarawak. The Star, 19 April 2006. Available on: <http://www.thestar.com.my/news/story.asp?file=/2006/4/19/southneast/%2013977927&sec=southneast> Date Accessed [10 March 2014]

Stiglitz, J. E., (2002). Development policies in a world of globalization. *Paper presented at the seminar: New international trends for economic development, 50th anniversary of the Brazilian economic and social development bank. (BNDES)*. Rio Janeiro.

Stringfellow R., Coulter J., Lucey T., McKone C and Hussain A (1997) Improving the access of smallholders to agricultural services in sub Saharan Africa: Farmer Cooperation and the role of the donor community. *Natural Resource Perspectives* 20

Swan, J.E. Trawick, I. F. , and Silva, D. W., (1985). How industrial salespeople gain consumer trust. *Industrial marketing management*. 14. 203-211.

Swinnen J.F and Maertens M (2006) Globalization, Privatization, and Vertical Coordination in Food Value Chains in Developing and Transition Countries, Plenary paper prepared for presentation at the International Association of Agricultural Economists Conference, Gold Coast, Australia, August 12 -18, 2006.

Tefera Eshetu (2008) The role of dairy cooperatives in stimulating innovation and market oriented smallholders development: The case of Ada'a dairy cooperative, central Ethiopia, Thesis submitted in partial fulfilment of the requirements for the Degree of Master of Science in Agriculture (Rural Development and Agricultural Extension)

Tham – Agyekum E. K., Appiah P. and Nimoh F. (2010) Assessing farm record keeping behaviour among small scale poultry farmers in the Ga East municipality, *Journal of Agricultural Science* Volume 2. Number 4 (December).

Thompson J., F. And Scheuerman, R.W., (1993). Curing and storing California sweet potatoes Meced County Cooperative Extension, Meced, California, 95340.

Tinsley R. D., (2005) Smallholder Market Creation Project: Consultant Report – Agronomy, Irrigation and Smallholder Agriculture, Winrock International

Tollens Eric (2006) Market information systems in sub Saharan Africa, challenges and opportunities. Poster paper prepared for presentation at the International Association of Agricultural Economists Conference, Gold Coast, Australia August 12-18, Available on: <http://ageconsearch.tind.io/bitstream/25590/1/pp060755.pdf> Date Accessed: 10 April 2016

Tomkins, C., (2001). Interdependencies, trust and information on relationships, alliances and networks. *Accounting organizations and society*. 26, 161-191.

Trading Economics (2017) Zambia GDP 1960 – 2017 Available on: <http://www.tradingeconomics.com/zambia/gdp> Date Accessed [13 July 2016]

Tschirley, D., M. Hichaambwa, M. Ayieko, J. Cairns, V. Kelly, and M. Mwiinga. 2012. Fresh Produce Production and Marketing Systems in East and Southern Africa - A Comparative Assessment. DRAFT. East Lansing, MI: Michigan State University's Guiding Investments for Sustainable Agricultural Markets in Africa Project.

Tschirley D., and Hichaambwa, M., (2010) The structure and behaviour of vegetable markets serving Lusaka, Food Security Research Project Working Paper No. 46, Lusaka, Zambia.

Tschirley, D., Muendo, K., M., and Weber, M., T., (2004). Improving Kenya's domestic horticultural production and marketing system. Current competitiveness, forces of change and challenges for the future. *A Tegemeo working paper number 8B, Tegemeo Institute of Agricultural Policy and Development*. Egerton University, Nairobi.

United Nations (2017) UN Data – Zambia. Available on: <http://data.un.org/CountryProfile.aspx?crName=ZAMBIA> Date Accessed [10 February 2017]

United Nations (2009) Cooperatives in Social Development. Report of the Secretary General. Available on: <http://socialeconomy.itcilo.org/en/files/docs/cooperatives-in-social-development-report-of-the-un-secretary-general.pdf> Date Accessed [10 June 2015]

United States Agency for International Development (USAID) (2011) Zambia Multi Year Strategy (2011 – 2015) Available on: <https://feedthefuture.gov/sites/default/files/resource/files/ZambiaFeedtheFutureMultiYearStrategy.pdf> Date Accessed [10 July 2013]

United States Agency for International Development (USAID) (2014) Partnering for impact: USAID and the private sector. Available on: https://www.usaid.gov/sites/default/files/documents/15396/usaid_partnership%20report_FINAL3.pdf Date Accessed [13 April 2016]

Valentinov V (2007) Why are cooperatives important in Agriculture? An organisational economics perspective. *Journal of Institutional Economics* 3 (01) 55 – 69.

Valters Craig (2014) Theories of Change in International Development. Available on: <http://www.lse.ac.uk/internationalDevelopment/research/JSRP/downloads/JSRP17.Valters.pdf> Date Accessed [10 March 2016]

Van der meer, C., (2006). Exclusion of small-scale farmers from coordinated supply chains in Reuben *et al* (eds) (2006). The agro-food chains and networks for development, Springer, Dordrecht. Netherlands.

Vermeulen Sonja and Cotula Lorenzo (2010) Making the most of agricultural investment: A survey of business models that provide opportunities for smallholders. Published by FAO and IIED Available online: <https://www.ifad.org/documents/10180/a314bc61-46ff-4df0-be1a-a9cc9ad1b3e9>
Date Accessed: 10 June 2016.

Voley, T.,(2008). The geographical cluster: a historical overview. *Geography compass* 2 (3), 790-813). Available online: www.sciencedirect.com. [Accessed 21-01-2013]

Vorley, B., Lundy, M. & MacGregor, J. 2008. Business models that are inclusive of small farmers. Paper prepared for FAO and UNIDO as background to the Global Agro-Industries Forum, New Delhi, 8–11 April 2008. London, IIED; Cali, Colombia, CIAT.

Wanyama, F. O., Develtere, P. and Pollet, I. (2008) "Encountering the evidence: Cooperatives and poverty reduction in Africa" in *Journal of Cooperative Studies*, Vol. 41, No. 3, pp. 16-27.

Watt, R., (1986). *Evaporative Cooling Handbook*. Second edition. Chapman and Halt. New York.

Wicks, A., C., Berman, S., C., and Jones, T., M., (1999). Toward a conception of optimal trust: moral and strategic implications. *The academy of management review*. 24, 99-116.

Wicks, A., C., Berman, S., C., and Jones, T., M., (1999). The structure of optimal trust: moral and strategic implications. *The academy of management review* 24 (1) 99-116. Available online; www.jstor.org [Accessed; 31-01-2013].

Wiggins Steve and Keats Sharada (2014) Smallholder engagement with the private sector. Available on: <http://www.value-chains.org/dyn/bds/docs/868/TopicGuideonSmallholderEngagementwithprivatesecto.pdf>
Date Accessed [10 February 2016]

Williamson, O. E., (1985). *The economic institutions of capitalism*, Free press, New York.

Williamson, O. E., (1996). *The mechanism of governance*. Oxford university press. Oxford.

Wilson, G., and Moller, K., (1995). *Business marketing: An interaction and network perspective*. Kluwer Academic Publishers. Boston.

World Bank Report, (2012), Zambia: sub-saharan Africa. Available online: www.dataworldbank.org. [accessed: 28-10-2013]

World Bank (2011) Changes in Country Classifications Available on: <https://blogs.worldbank.org/opendata/changes-country-classifications> Date Accessed: [2 August 2016]

World Bank (2017) Zambia Country Data. Available on: <http://data.worldbank.org/country/zambia> Date Accessed [10 March 2017]

World Bank, (2008). Zambia value chain management for poverty reduction. Agrifood International and Agridev Consult, Lusaka, Zambia.

World Health Organization, (2012) Zambia. Available online: www.who.int [Accessed; 16-02-2013]

Yaqub, M., Z., Malik, A., and Shah, H., (2010). The role of satisfaction, trust and commitment in value creation and strategic networks. *Journal of economics, finance and administrative sciences* 18, 133-145.

Yee, W., and Yeung, R., (2002). Trust building investock farmers: an exploratory study. *Nutrition and food science* 32 (4), 137-144.

Yin, R. K., (1984). Case study research design and methods. Sage publications. Beverly hills', California.

Yin, R. K., (2003). Case study research design and methods, (Third edition). Sage publications. Thousand Oaks, California.

Zaheer A., McEvily B. and Perrone V., (1998) Does Trust Matter? Exploring the Effects of Inter-organizational and Interpersonal Trust on Performance, *Organization Science*, Volume 9 No. 2 (March – April), INFORMS.

Zainal Z (2007) Case study as a research method. Available on: http://psyking.net/htmlobi-3837/case_study_as_a_research_method.pdf Date Accessed [5 February 2015]

Zaltman, G., (2003). How customers think; Essential insights into the mind of the market. Havard business school press.

Zambian government, (2011). Zambia development and cooperation. Available: www.ec.europa.eu. [Accessed 27-01-13]

Zirebwa, J., (2000). The Zimbabwean experience in: Treadle pumps for irrigation in Africa (Ed. Kay, M. And Brabben, T.). International Programme for Technology and Research in Irrigation and Drainage. *A Knowledge synthesis report October 2000*, 39-41.

Zucker, L.G., (1986) Production of trust; institutional sources of economic structure 1840-1920 in *Research in organizational behaviour* (8), 53-111.

Annex 1: Household Questionnaire for Baseline Study

District: -----

Date of Interview: ----- Village name: -----

Enumerator: -----

Name of respondent: -----

	Male	Female	Child
Household Head <i>(Tick appropriate)</i>			
Age of the Household Head			
No. of people in the household	0 -5 years		
	6 - 10 years		
	11 - 18 years		
	19 - 30 years		
	31 - 45 years		
	Above 46 years		
Size of household production land			
Do you have title deeds for your land	Yes		No

Main Household Assets

	Yes	No	
Do you own any cattle?			How many?
Do you own goats / sheep?			How many?
Do you own any donkeys?			How many?

Do you own pigs?			How many?	
Do you own chickens?			How many?	
	Yes	No	Iron Sheets Roof	Thatched Roof
Do you own a house?				
Do you own any business?				

Circle the items that are owned by the household:

Tractor truck car motorcycle cart bicycle plough hand hoe radio mobile-phone

Television irrigation equipment water pump Solar panel

What are the 5 main crops important to you?

Crop	Rationale

Vegetable Production and Marketing

	Have you grown?		Have you sold the crop to markets?		Type of Market accessed?
	Yes	No	Yes	No	
Cabbage					
Rape					
Spinach					
Carrots					
Baby corn					

Egg plant / Impwa					
melons					
Tomatoes					
cucumber					
Onions					
Butternuts					

Water and Irrigation

Do you have a water source for your vegetable production activities?	
What type of water source do you utilise for your vegetable production activities?	
Do you have irrigation equipment?	
What type of irrigation equipment do you have?	
How did you access this equipment? [purchased/donation/borrowed]	
If you do not have this irrigation equipment – how do you water your crops / vegetables?	
Would you be keen to purchase the irrigation equipment (Yes / No)	
What type of irrigation equipment are you willing to purchase?	

Household Labour

	Every Year	When needed	Never
Do you hire agricultural labour to do work for you? <i>Tick appropriate response</i>			
Do you sell your labour to others? Yes / No			

Food Safety and Quality Standards

	Yes	No
Have you heard about food safety and quality standards?		
Have you received any training on food safety and quality standards?		
Who provided this training?		
When was the training provided?		
Do you think compliance to these standards would help you to access high value markets for your vegetable produce?		
Do you have commitment to implement these standards?		
Do you use any chemicals to control pests and diseases for vegetable production?		
If yes – what type of chemicals do you use?	a. _____ b. _____ c. _____	
Where do you purchase these chemicals?		
Have you received any training for application of chemicals on your vegetables?	Yes	
	No	
Who provided this training?		
What are the main difficulties that you have encountered in implementing these standards?		

Linkages to High Value Markets

Are you a member of a farmers' cooperative?	Yes	
	No	
What are your responsibilities to the cooperative as a member?		
What are the benefits that you secure from being a member of a cooperative?	Seed	
	Fertilisers	

	Agricultural extension	
	Linkages to markets	
	Access to agricultural finance	
	Other	
In your opinion are farmer's cooperatives capable of successfully linking farmers to value markets?	Yes	
	No	
What is the rationale for your response above?		
In your opinion, what needs to be done to strengthen the capacity of farmer's cooperatives to link small scale farmers to value markets?		
If you are not a member of a cooperative – are there any reasons why you haven't joined one?		
How do you access agricultural support services in your community?		

Annex 2: Focus Group Discussion Guidelines for study Baseline Survey

Welcome Introductions	<ul style="list-style-type: none"> • Thank the participants for coming • Introduce the research team
Starting the Session	<ul style="list-style-type: none"> • Provide a simple explanation on the objectives of the research study • Explain why respondents were chosen and the importance of their contribution • Emphasize the issue of confidentiality • Explain that the research team will be taking notes and/or using a recording device to ensure accurate documentation of the discussion points and input. • Start with simple general questions that will make the respondents feel comfortable and develop rapport with the research team (e.g. general discussion on the livelihoods activities mainly undertaken by the community members)
What is the current livelihood status of the small holder producers?	<ul style="list-style-type: none"> • Landholding – What is the average land size of small scale farmers in this community? • Capital assets – What are the main livelihood assets owned by small scale farmers in this community?
Vegetable Production and Marketing	<ul style="list-style-type: none"> • What are the main vegetable crops grown by small scale farmers in the community? • What are the main vegetable crops sold to markets by small scale farmers in the community? • What type of markets are the small scale farmers in the community mainly accessing for the different vegetable crops?
Water and Irrigation	<ul style="list-style-type: none"> • What type of water sources are used for vegetable production activities by the small scale farmers in the community? • What type of irrigation equipment is used for vegetable production activities by the small scale farmers in the community? • How do the farmers access this equipment? • What are the main challenges faced by small scale farmers in the community in relation to irrigation of their vegetable crops?
Household Labour	<ul style="list-style-type: none"> • Is adequate household labour available for vegetable production and marketing activities?

Food Safety and Quality Standards	<ul style="list-style-type: none"> • What is the farmers understanding of Food safety and quality standards? • Has any training on these standards been provided? • Who has provided this training? • What are the main constraints farmers are facing to comply with the food safety and quality standards in relation to their vegetable production and marketing activities?
Linkages to High Value Markets	<ul style="list-style-type: none"> • Where do the majority of small scale farmers in your community sale their horticultural produce? • What are the main constraints faced by the small scale farmers to access and participate effectively in these markets? • Are small scale farmers in the community members of farmer's cooperatives? • What are the main benefits derived by farmers in the community from cooperative membership? • Are cooperatives capable of linking farmers in the community to high value vegetable markets? • How can the capacity of cooperatives be strengthened to link farmers to high value vegetable markets?

Annex 3: Questionnaire for trust measurement

Question No.	Question	Response			
Q1	Name of respondent				
Q2	Are you the household head	Yes		Q3 If not what is your relationship with HH (e.g. wife)	
		No			
Q4	Respondent mobile number				
Q5	Name of respondent community				
Q6	Respondent Sex	Male		Female	
Q7	Marital Status				
Q8	Respondent age (<i>tick appropriate response</i>)	< 20 years			
		20-30 years			
		31-40 years			
		41-50years			
		51-60 years			
		61-70 years			
		above 70 years			
		respondent doesn't know			
Q9	Respondent's highest education (<i>tick appropriate response</i>)	primary			
		secondary			
		tertiary			
		no education			
Q10	Can you read and write	literate		Q11 How about the HH?	
		illiterate		literate	
				illiterate	
Q12	Household size (No. of people living in the household including you)	less than 5 people		Q13 How many meals does your household normally consume in a day?	
		5-8 people		1	3
		8-10 people		2	M3
		more than 10			
Q14	Religion/ denomination				
Q15	Respondent tribe				
Q16	What is the size of your production? (<i>tick appropriate response</i>)	less than 1 Lima			
		1-2 limas			
		2-3 limas			
		3-4 limas			
		4-5 limas			

		more than 5 limas			
Q17	Do you have title deeds for the land?	YES		NO	
Q18	What is the size of your vegetable production plot? (<i>tick appropriate response</i>)	less than 1 lima			
		1-2 limas			
		2-3 limas			
		3-4 limas			
		4-5 limas			
		more than 5 limas			
Q19	Do you grow vegetables for sale at your farm?	yes		No	
Q20	How long have you been involved in commercial vegetable production and marketing?	less than 1 year		3-4 years	
		1-2 years		4-5 years	
		2-3 years		more than 5 years	
Q21	Which market do you specifically target for your vegetables?				
Q22	How far is your production plot from this target market?	less than 10 KMs		30- 40kms	
		10-20kms		40- 50kms	
		20-30kms		more than 50kms	
Q23	How long does it take you to get to this market?	less than an hour		3-4hours	
		1-2 hrs		4-5hours	
		2-3hours		more than 5 hours	
Q24	How do you get your produce to this target market?	walk		bicycle	
		bus		car/lorry	

Q25	How long have you been a member of the Livingstone farmers cooperative	less than 1 year		3-4 years	
		1-2 years		4-5 years	
		2-3 years		more than 5 years	
Q26	Do you supply the Green market with vegetables for sale?	YES		NO	
Q27	If yes-how often do you supply these vegetables to the green market?	Daily			
		weekly			
		every 2 weeks			
		once a month			
Q28	How long have you been supplying vegetables to the green market	less than 1 year		3-4years	
		1-2 years		4-5years	
Q29	How long does it take to get your produce from your farm to the market	less than 1 hour		3-4 years	
		1-2 hours		4-5 years	
		2-3 years		more than 5 years	
Q30	Do you have water source for your vegetable production activities	yes		no	
Q31	If yes what is your source of water	River		Dam	
		Stream		Well	
		borehole		other	
Q32	Does this source provide you with sufficient water for vegetable production throughout the year?	YES		No	
Q33	Do you have irrigation equipment for your vegetable production activities	yes		No	
Q34	Type of irrigation equipment	treadle pump		sprinkler	
		Drip		buckets	

		others (specify)		
Q35	What is your preferred irrigation method?			
Q36	Are the inputs required for vegetable production easily available to farmers in your community	yes		no
Q37	If No- what is the main challenges that you face to access production inputs	finance		poor quality inputs
		distance from the market		others (specify)
Q38	Do you have enough labour to facilitate commercial vegetable production in your household	yes		NO
Q39	If NO, why labor is a constraint			
Q40	Do you receive extension advice from a trained extension officer regularly	yes		NO
Q41	How often do you receive visits by an extension officer for technical support linked to your vegetable production activities	Weekly		every two months
		monthly		once every 5-6months
		every three months		never received a visit
Q42	The extension officer that visits you – which organisation are they from (take note the extension officer should be linked to vegetable production)	government		private company
		NGO		others
Q43	Are you satisfied by the technical support that you receive from the extension officers?	YES		NO
Q44	If No, what is your main concern			

Access to Information

No.	Question	Strongly agree	Agree	Neutral	disagree	strongly disagree

Q45	The green market frequently informs me produce food safety and quality standard requirements of target markets.					
Q46	The Green Market often advises me of potential produce market demand on various produce					
Q47	The green market often advises me of market related risks for various produce					
Q48	The green market shares information on type of production inputs (e.g. seed varieties, chemical usage etc) required by the target market.					
Q49	The green market shares information on appropriate time (s) for planting and harvesting of required market produce					
Q50	The green market frequently informs me of produce prices and / or fluctuations on the market.					
Q51	The green market frequently shares with me information on produce disease outbreaks and control mechanisms					
Q52	The green market frequently shares with me information on produce volumes required by target market.					
Q53	The green market shares with me information on packaging standards required by target market					
Q54	I am receiving adequate market information from the Green Market.					
Q55	The green market treats farmers like me fairly and justly (integrity)					
Q56	Whenever the green market makes an important decision, I know it will					

	be concerned about farmers like me (integrity, original dimension, faith)					
Q57	The Green Market can be relief upon to keep its promises (dependability)					
Q58	I believe the green market takes into account the opinions of farmers like me when making decisions (dependability)					
Q59	I feel very confident about the green market skills to link farmers like me to fresh produce markets (competency)					
Q60	Sound principles and business ethics guide the green market's behaviour in our transactional exchanges (integrity)					
Q61	The green market does not mislead people like me (integrity)					
Q62	I am willing to let the Green Market make decisions for farmers like me (dependability)					
Q63	I think it is important to watch the Green Market closely so that it does not take advantage of farmers like me (dependability, Reversed)					
Q64	I believe the information provided by the Green Market					
Q65	The Green Market Meets my expectations					
Q66	I receive realistic / fair prices for my produce supplied to the Green Market					
Q67	The Green Market is quick to handle complaints					
Q68	There isn't a lot of conflict between Myself and the Green Market					

Q69	I am willing to utilise specific production inputs (e.g seed varieties) some of which may be more expensive than traditional varieties) as well as chemicals (as may be advised by the Green Market) in order to meet the requirements of target high value markets.					
Q70	I am willing to maintain up to date farm records of all production activities (as may be advised by the Green Market) to meet the requirements of target value markets.					
Q71	I am willing to construct sanitation facilities on the farm (as may be advised by the Green Market) to facilitate compliance to the requirements of high value markets.					
Q72	I am willing to participate in training programmes as may be advised by the Green Market to enable me to gain a better understanding of the food safety and quality requirements of target markets.					
Q73	I am willing to participate in any certification programme (as well as contribute towards the costs thereof) (as may be advised by the Green Market) to facilitate compliance to the requirements of target high value markets.					
Q74	I am willing to adhere to specific produce packaging procedures (as may be advised by the Green Market) to facilitate compliance to the requirements of target high value markets.					

Q75	I am willing to adopt specific environmentally friendly agronomic practices (as may be advised by the Green Market) to facilitate improved competitiveness in target high value markets.					
Q76	Before the establishment of the Green Market, I did not trust the Livingstone Farmers Cooperative that it was committed to link farmers like me to high value fresh produce markets					
Q77	After the establishment of the Green Market, which offers cold chain services, extension, market information etc – my trust in LIFCs that they are committed to link farmers like me to high value fresh produce markets has increased.					